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T.R. Carter

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Cover: Ordovician test Consumers' 34304 Maidstone 4-18-V being drilled by Underwater Gas Developers Limited.

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Oil and Gas Exploration, Drilling and Production Summary, 1987

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Introduction

Information contained within this report has been compiled from records submitted to the Petroleum Resources Section by licensed operators in compliance with the Petroleum Resources Act, R.S.O. 1980. Except where otherwise stated, all statistics and information reported are for the 1987 calendar year.

ACKNOWLEDGEMENTS

This report could not be compiled without the efforts and contributions of all the staff members of the Petroleum Resources Section, particularly the Petroleum Resources Inspectors who are responsible for ensuring the timely and accurate submission of data by industry personnel.

I. Section Organization

The Petroleum Resources Section of the Ontario Ministry of Natural Resources operates under the authority of the Petroleum Resources Act, R.S.O. 1980. The Section enforces the regulations made under the Act, specifically; Regulation 752 - Exploration, Drilling and Production. The Section also administers Regulation 633 - Exploratory Licences and Leases for Oil and Natural Gas North of the Fifty-First Parallel of Latitude, and Regulation 634 - Exploratory Licences and Production Leases for Natural Gas in Lake Erie, both made under the Mining Act. The Section is responsible for all matters related to the disposition of Crown-owned oil and gas rights as well as the regulation of the exploration, development and production activities of the oil, gas, and brine industry in Ontario. The Section employs operational, geological, engineering, inspection, and support staff. In addition to their regulatory functions staff also provide information and advice relevant to oil, gas and brine resources in the province. The Section also maintains a core and drill cuttings sample storage and study facility for use of government staff and the public for subsurface geological research.

Administration and engineering offices are located at 659 Exeter Road, London, Ontario. Key staff in the Petroleum Resources Section in 1987 are shown in Figure 1. Geological offices and drill cutting and core storage facilities, known as the Petroleum Resources Laboratory, are located in a separate building at the same address. Inspection staff operate from the various Regional and District offices throughout the province as shown in Figure 2.

Administratively the Petroleum Resources Section is part of the Southwestern Region of the Ontario Ministry of Natural Resources, reporting to the Regional Director. Responsibility for policy and legislation is vested in the Fuel Minerals Section of the Land Management Branch, based in Toronto. In 1987 the Manager of the Fuel Minerals Section was Ray Pichette, Senior Policy Advisor was John Fox, and Section Secretary was Margaret Phillip.

1. PETROLEUM RESOURCES LABORATORY

The Petroleum Resources Laboratory is the principal source of information on the subsurface geology of southwestern Ontario, and the only publicly accessible source. Resources and data available include; core and cuttings samples from over 13,000 wells, file information on over 20,000 wells, and the largest single collection of publications and unpublished data on the subsurface geology of southwestern Ontario.

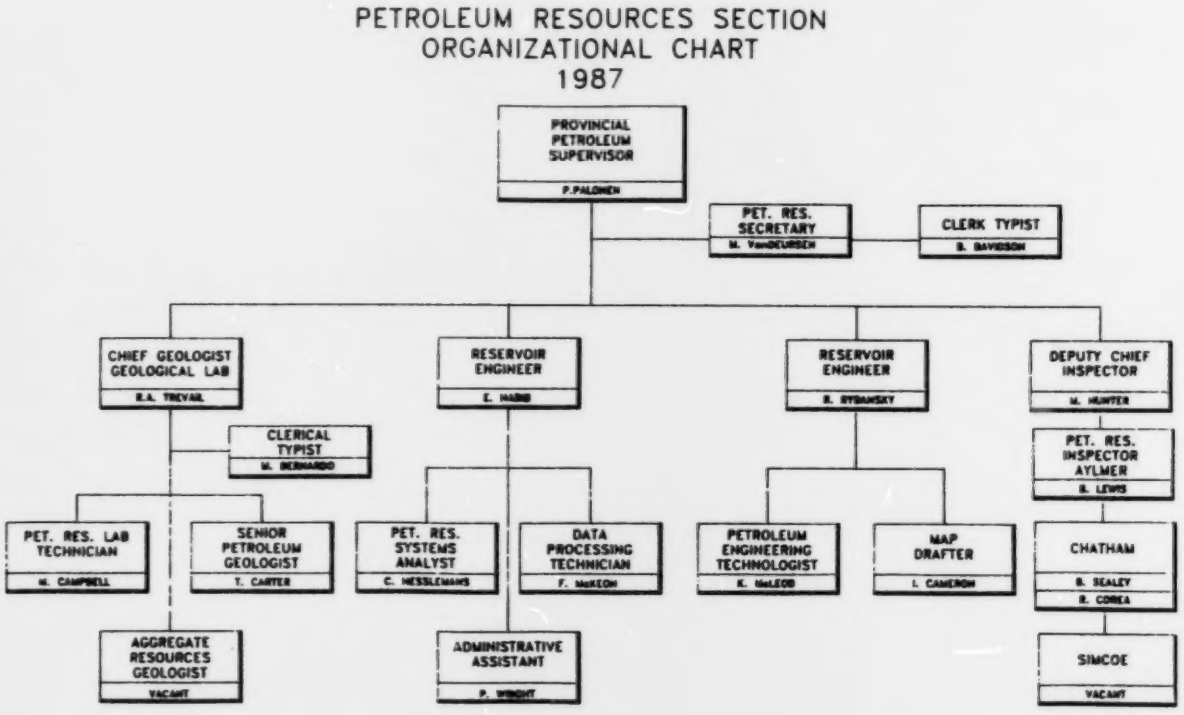

Figure 1. Petroleum Resources Section staff organization, 1987.

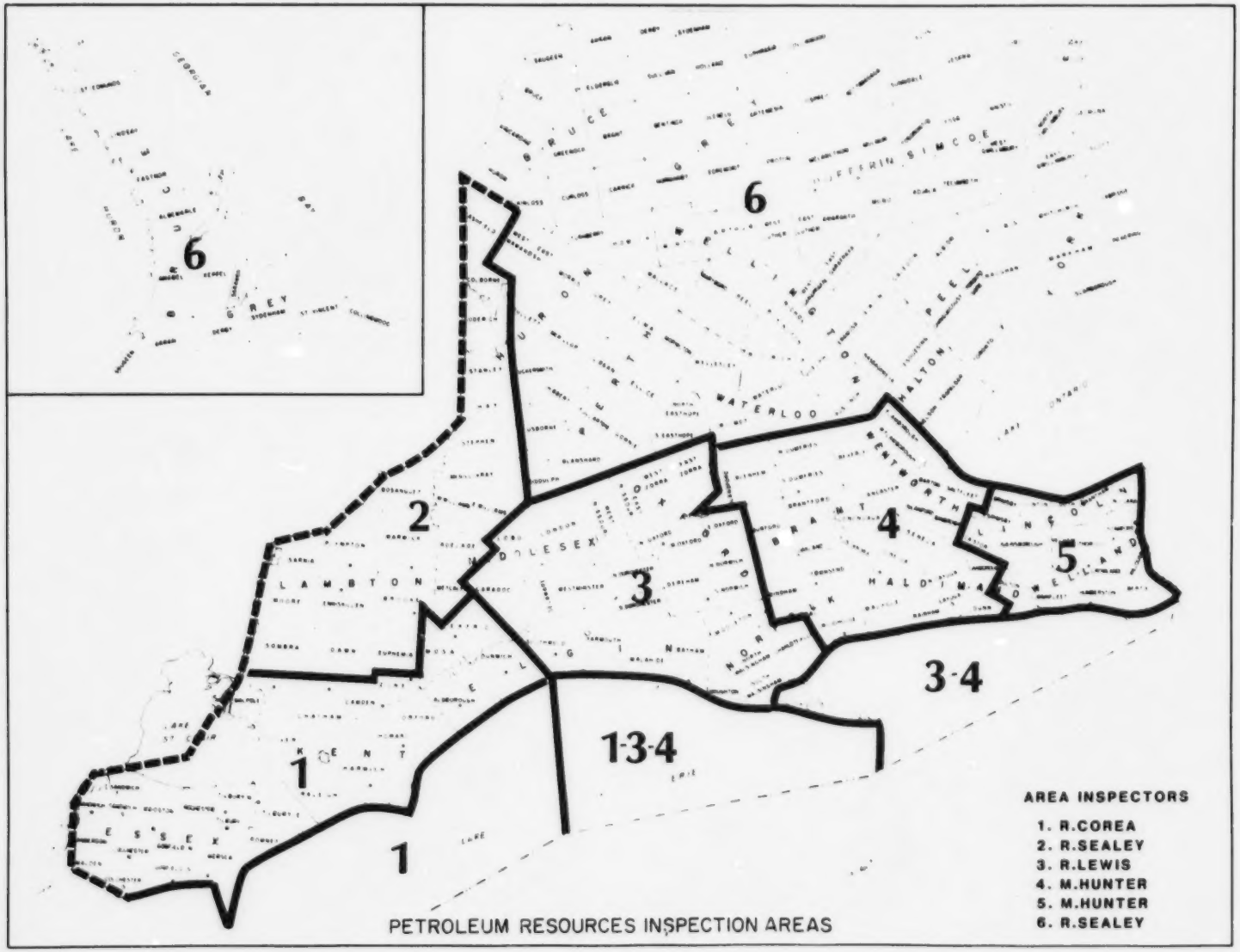

Figure 2. Petroleum Resources inspection areas.

All subsurface geological samples collected from drilling operations in southwestern Ontario are stored at the Lab. Regulation 752 requires that samples from all wells drilled under the authority of the Petroleum Resources Act be collected by the operator and delivered to the Ministry of Natural Resources, under the direction of the area Inspector, as well as information on drilling, well construction, fluids, etc. Samples and related information are processed for permanent storage and maintained for public access.

Cuttings are sorted and washed when they are received from the field. Cores received at the Lab are slabbed using a diamond saw. All cores and cuttings are catalogued and permanently stored for use by the public. Once samples and core have been prepared for examination, formation tops are determined and well cards are prepared showing well locations, elevations of all formation tops, and other technical information.

Work areas for examination of files and samples are available for public use. Use of a petrographic microscope, binocular microscopes and sample examination trays etc. can be arranged with Lab staff depending on availability. There is no charge for these services. A photocopier is also available for public use at a cost of 12.5 cents per copy.

Laboratory resources are utilized by Ministry of Natural Resources geological staff to provide accurate information and interpretations for well classification, spacing regulations, policy and legislation development, and provide data to inspection staff for design and approval of casing programs. Accurate geological information is critical for policy decisions and new legislation affecting the petroleum industry. Geological information supplied by MNR is utilized by numerous other government ministries and agencies, notably the Ontario Geological Survey, the Ontario Energy Board, and the Ministry of Environment.

Accurate and consistent geological data are vital to industry to maximise their exploration success and thus their contribution to energy self-sufficiency for Ontario. Availability of accurate, up-to-date geological data also provides an important incentive for industry to continue to invest in Ontario. Industry geologists from Michigan, Ohio, and Alberta, as well as Ontario, make extensive use of the file data and drill cuttings and core samples stored at the Lab, and geological information provided by geological staff.

The Laboratory is also an important resource centre for education and academic research on the subsurface geology of southern Ontario. Laboratory facilities and services are extensively utilized by researchers at Ontario universities. Their research activities are supported principally by grants from the provincial Ontario Geoscience Research Grants Program, and the federal Natural Sciences and Engineering Research Council. Some projects are funded directly by industry. Lab facilities are also utilized by university geology classes for teaching subsurface geology principles and techniques, and the geology of Ontario.

The Petroleum Resources Laboratory was moved, on July 6, to new facilities located at 659 Exeter Road in London after 16 years in the downtown area of the city. Many refinements to layout of public, office, and storage areas have been incorporated into the new building.

2. PROGRAM ACTIVITIES

Geological Program

Geological staff continued to collect and interpret geological data, make geological interpretations, prepare statistical summaries, conduct and publish the results of geological research, and make technical presentations. Approximately 600 clients from Ontario, Michigan, Alberta, Ohio, Texas, Pennsylvania, and Colorado consulted with geological staff at the Petroleum Resources Laboratory in 1987.

Geological and support staff, with assistance of other Section staff, contributed to or produced several publications on the Ontario oil and gas industry and/or subsurface geology in 1987. These included; summaries of annual oil and gas exploration and development activity in Ontario published in Northeast Oil World, American Association of Petroleum Geologists Bulletin (Carter, T.R., and Campbell, G.R., 1988), Ontario Petroleum Institute newsletter, and Report of Activities 1987 of Resident Geologists published by the Ontario Geological Survey (Trevail, 1988). Three technical papers were presented by geological staff in 1987. Bob Trevail, Chief Petroleum Geologist, presented a paper, co- authored by Dr. Leigh Smith of Queen's University, entitled "Cratonic tectonism as control of spatial distribution and form of Silurian pinnacle and platform reefs, southwestern Ontario" at the Canadian Reef Symposium held January 23-30, 1987. A second paper entitled "Remote sensing techniques for delineation of major structural elements of the Paleozoic bedrock, southwestern Ontario", and co-authored by Vern Singhroy, Ontario Centre for Remote Sensing, was presented by Trevail at the 30th Conference of the International Association for Great Lakes Research in May, 1987. Terry Carter, Sr. Petroleum Geologist, presented a paper entitled "A comparison of the Middle Proterozoic Balmat evaporite sequence with Niagaran and Cayugan strata in the Michigan-Appalachian Basins" at the 26th annual conference of the Ontario Petroleum Institute (Carter, 1987).

Spacing Unit Applications

In 1987 the Ministry of Natural Resources embarked on a new initiative of stricter enforcement of Section 12, Ontario Regulation 752, requiring applications for the establishment of spacing units to be submitted following the discovery of a pool capable of producing oil or gas. In the past, non-application has resulted in unequal distribution of royalties, poor production practices, and over-drilling of some reservoirs. As a consequence of this enforcement initiative industry submitted approximately 25 applications for consideration, and the number of voluntary unitization agreements increased.

Ontario Energy Board

Staff of the Petroleum Resources Section participated in one formal hearing, O.E.B 135, which dealt with an application by The Consumers' Gas Company Ltd., Pembina Exploration Limited, and Devran Petroleum Ltd. (691923 Ontario Ltd.), for an order requiring and regulating the joining of various interests in the Hillman Pool. This procedure is known as unitization and provides for the orderly drilling and operation of wells, the designation of management, and the apportionment of both the costs and benefits of such drilling and operations. Application for a hearing was made March 10, 1987. Section staff were asked by the Board to review the applicants' pre-filed evidence, and to provide expert witness testimony at the hearing.

The hearing commenced September 2, 1987 at the Board's offices in Toronto to hear motions filed by Mr. Giffen, who was retained as legal counsel by 3 landowners opposed to the unitization application. The hearing was reconvened in Windsor at the Red Oak Inn on October 20 and 21, and concluded in Toronto on October 22. Five witnesses testified on behalf of the applicant. R.M. Rybansky and R.A. Trevail of the Ministry of Natural Resources presented evidence on behalf of Board staff. Counsel for 3 intervenors did not call any witnesses to support their intervention, and 2 landowners/intervenors commented on the application on their own behalf.

According to the applicant the most compelling reason for unitization was to overcome the inequitable distribution of landowner royalties occurring under Ontario Regulation 1/85. Regulation 1/85 regulated the spacing of wells drilled in the probable area of the Hillman Pool. Petroleum Resources Section staff gave testimony supporting the application. Evidence cited in support of unitization included increased hydrocarbon recovery, reduced operating costs, and savings on investment – all of which lead to conservation of oil and gas resources and more efficient extraction of the resource. The main intervenors argued that unitization would greatly reduce their royalty income and thus be an expropriation of rights granted to them under their respective leases.

The Ontario Energy Board released its Decision With Reasons, E.B.O. 135, on December 23, 1987. The Board ruled that the Hillman Pool should be unitized in order to maximize recovery from the pool and provide for an equitable distribution of royalties. The Board ruled that the pool boundaries were sufficiently well defined to be the basis for unitization. Highlights of the Board's findings on technical issues are summarised below.

1. The Board accepted the pool boundary as proposed by the applicants.
2. The Board accepted the unit boundary as recommended by the MNR representatives.
3. The volumetric method of royalty allocation is to be employed, as opposed to the acreage method. This is a very significant ruling as this is the first unitization order in which this method of calculation has been employed.
4. Unitization need not, and in this case ought not to be related to secondary recovery, if any.
5. Compensation to landowners for surface uses shall be negotiated according to the estimated net income foregone by the landowner as a result of lost agricultural production, provided that the amount is not less than $500 per acre per annum. Such compensation must also be paid for all affected lands immediately outside the fencing surrounding the well sites, from which crops cannot be harvested.
6. Transportation costs to the sales point can continue to be deducted prior to calculation of royalties.
7. The Consumers' Gas Company Ltd. was appointed operator of the pool.
8. Unitization of the pool was made effective retroactive to April 1, 1987, as requested by the applicants, in order to rectify the inequitable distribution of royalties.

In respect of costs, the Board's findings were as follows.

1. The applicants' costs must be borne by the applicant.
2. Fifty percent of the costs incurred by the objectors shall be paid, half by the applicants and half by the royalty recipients.
3. The applicants were directed to pay the Board's costs, 50 percent of which was to be recovered from the royalty recipients.
4. Three landowners who presented evidence were to be paid an award of $300 each.

Oil, Gas, and Brine Resources Act

Ministry staff, in consultation with industry representatives appointed by the Ontario Petroleum Institute, began the task of redrafting the Petroleum Resources Act RSO 1980, in 1986. This process was ongoing throughout 1987.

On October 26, 1987, a technical paper on the proposed Oil, Gas, and Brine Resources Act was given by Ray Pichette, Manager, Fuel Minerals Section, Ministry of Natural Resources, at the 26th Annual Conference of the Ontario Petroleum Institute. The talk focussed on the six primary objectives of the proposed legislation, which are:

1. To provide for the economic, orderly, and efficient development of oil, gas, and brine resources of Ontario;
2. To effect conservation and prevent waste of such resources;
3. To secure the observance of safe and efficient practices related to oil and gas drilling, production, and brine disposal;
4. To protect correlative rights;

5. To streamline government procedures and expedite tribunal hearings; and
6. To make Crown lands of Ontario available for exploration and development.

At the time of writing the proposed legislation was on hold due to other legislative priorities of the Government of Ontario.

II. 1987 Exploration and Development Highlights

Low world oil prices continued to have a negative impact on the amount of exploration activity in Ontario in 1987. A total of 107 wells were drilled in Ontario in 1987 for a combined drilled length of 58,870.9 metres. This is comparable to the activity level recorded for 1986, but is a major decline compared to 1985 and the immediately preceding years when an average of 200 wells were drilled in Ontario each year. Twenty percent of the exploratory wells and 58% of the development wells were successfully completed as oil or gas producers. Exploratory wells completed as producers are listed in Table 1 and located on Figure 3. Table 2 lists results of other wells considered to have significant exploration interest or which contributed important new stratigraphic information.

Exploration for and development of Ordovician oil and gas reservoirs again was the highlight of activity in Ontario in 1987, continuing at the accelerated pace typical of the previous 5 years. All of the new Ordovician oil and gas producers drilled in 1987 were completed in dolomitized linear fracture zones in limestone of the Trenton Group. Initial daily production rates are not available for most of these wells, but by comparison with wells in the Hillman and Dover 7-5-V East pools, which were discovered in 1983, initial daily production rates could be as high as 47 m^3/day of oil (300 BOPD) or more. In the Hillman pool, Consumers et al 33817 Mersea 3-13-A is reported to have produced 26,733.2 m^3 (168,146 bbl) of oil over a period of approximately 34 months to the end of 1987, an average of approximately 24 m^3/day (150 b/d).

A total of 18 exploratory wells testing Ordovician targets were drilled in 1987, resulting in 4 oil producers and 1 gas producer for a success rate of 28%. Eleven of the exploratory wells were located in Essex County, 6 were in Kent County, and 1 well was drilled on Manitoulin Island.

The most significant well drilled in Ontario in 1987 was an Ordovician exploratory test in Romney Township in Kent County, known as Consumers' et al 34281

TABLE 1: SUCCESSFUL EXPLORATORY WELLS IN SOUTHWESTERN ONTARIO IN 1987.

MAP NO.	LATITUDE LONGITUDE	WELL NAME	PRODUCING FORMATION	METRES DRILLED	CLASS STATUS	COMPL. DATE
ESSEX						
1	42°14′34″N 82°48′10″W	Cons/Ram 34246 Maidstone 7-17-V	Verulam	1120.0	NPW OP-SUS	87.02.27
2	42°07′13″N 82°30′19″W	Ram 99 Mersea 7-19-VIII	Cobourg	1081.0	NPW OP	87.12.18
3	42°07′00″N 82°29′46″W	Cons et al 34150 Mersea 2-20-VII	Cobourg Verulam	1090.0	NPW OP-GS	87.08.13
KENT						
4	42°22′15″N 82°19′50″W	PPC 10 Dover 1-6-III E.	Verulam	1176.0	NPW GP	87.12.22
5	42°06′35″N 82°25′58″W	Cons et al 34340 Romney 7-10-II	Verulam	1106.0	NPW OP	87.12.06
6	42°08′01″N 82°25′49″W	Cons et al 34281 Romney 6-13-III	Verulam	1105.0	NPW OPGS	87.07.30
7	42°12′00″N 82°24′48″W	Ram 94 Tilbury East 1-24-IX	Verulam	1115.0	NPW OP-SUS	87.01.30
NORFOLK						
8	42°41′10″N 80°31′47″W	F&M 13 North Walsingham 8-13-VII	Thorold Grimsby	402.3	NPW GP	87.05.28
OXFORD						
9	43°13′59″N 80°41′30″W	Riley/Northquest Blandford 5-7-VIII	Cambrian	882.4	NPW GP	87.08.21
WENTWORTH						
10	43°05′39″N 79°47′37″W	Donald 1 Binbrook 3-25-VII	Whirlpool	146.6	NPW GP	87.11.19
11	43°07′25″N 79°53′23″W	Maras 1 Glanford 1-11-VII	Whirlpool	153.9	NPW GP	87.03.25

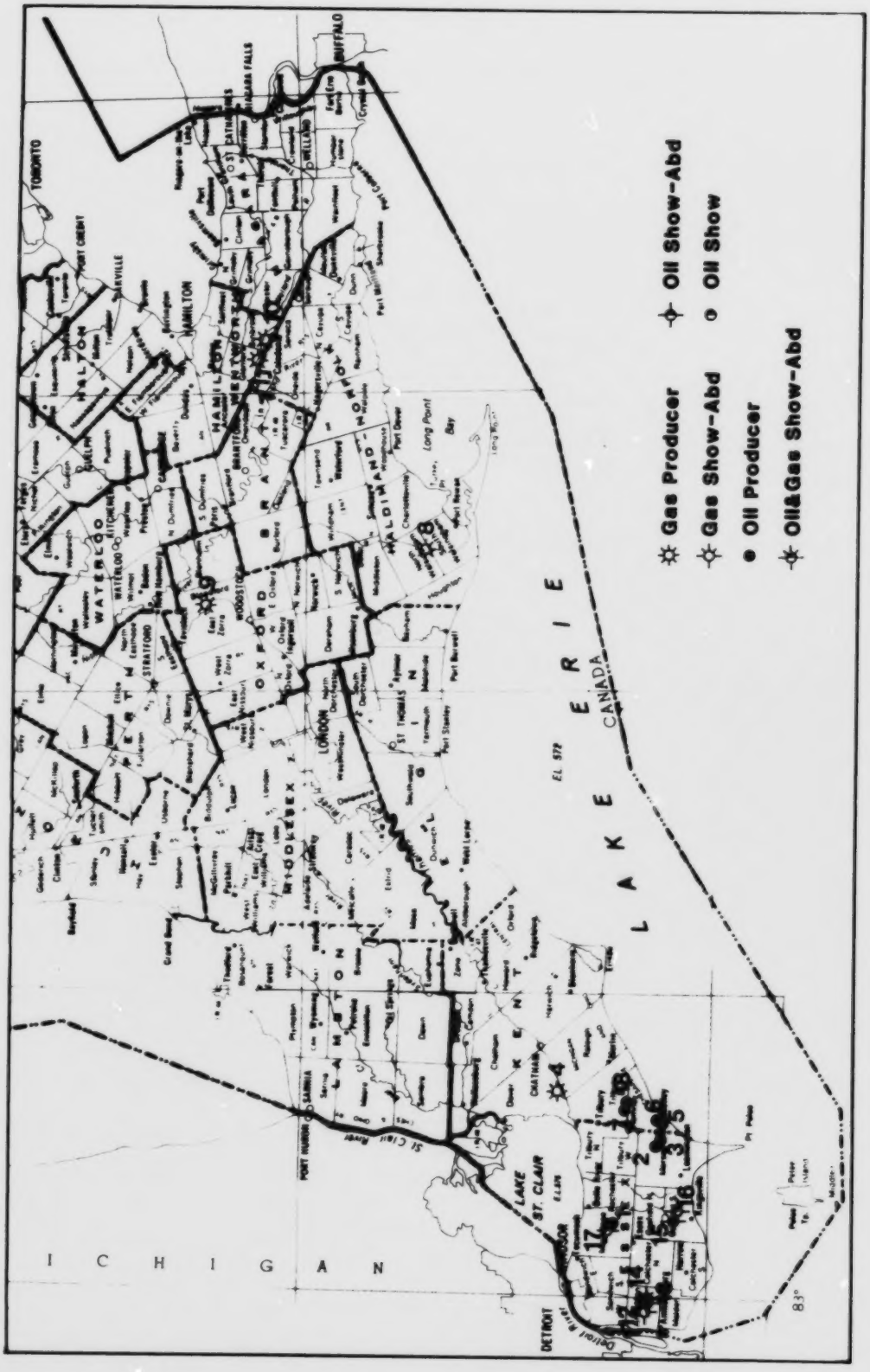

Figure 3. Discoveries and important dry tests in southwestern Ontario in 1987.

TABLE 2: IMPORTANT DRY TESTS IN 1987.

MAP NO.	LATITUDE LONGITUDE	WELL NAME	FORMATION SHOWING OIL OR GAS	METRES DRILLED	CLASS STATUS	COMPL. DATE
ESSEX						
12	42°10′03″N 83°01′09″W	Pembina Maxus, Anderdon 2-11-V	Salina F Unit	1119.0	NPW GS-ABD	87.11.13
13	42°09′54″N 83°00′57″W	Pembina Dia-Sham Anderdon 8A-11-VI	Salina E Unit	1125.0	NPW GS-ABD	87.07.12
14	42°09′54″N 83°00′57″W	Pembina Dia-Sham Anderdon 8-11-VI	Salina E Unit	302.5	NPW LH-GS-ABD	87.05.26
15	42°04′30″N 82°43′54″W	Cons/Paladin 34312 Gosfield South 1-I-III	Verulam	1050.0	NPW OSGS-ABD	87.10.14
16	42°05′30″N 82°46′12″W	Consumers' 34210 Gosfield South 8-7-V	Verulam	1047.0	NPW OS-ABD	87.01.30
17	42°14′56″N 82°48′48″W	Consumers' 34305 Maidstone 6-16-VI	Verulam	1123.0	NPW OS-ABD	87.09.24
18	42°11′39″N 82°24′38″W	Ram 96 Tilbury East 6-24-IX	Cobourg Verulam	1115.4	NPW OS-SUS	87.07.18

Romney 6-13-III. This well reached total depth on July 30 and resulted in discovery of an important new Ordovician oil pool referred to by the operator as the Renwick South pool. Until this time most Ordovician exploration was concentrated in Mersea Township and to a lesser extent in Dover Township. This well stimulated interest in exploration for Ordovician pools in Romney Township. The well was drilled to a total depth of 1105 metres in Precambrian basement rocks, and was completed for production in a perforated interval from 834.5 to 852.3 metres K.B. in the Verulam Formation. A total of 1,604 m^3 of oil was produced from this well in 1987, of which 405 m^3 was test production. The balance was produced subsequent to putting the well on pump on December 3, 1987.

Also in Romney Township, another new Ordovician pool was discovered on December 6 by Consumers' et al 34340 Romney 7-10-II, immediately northeast of the Romney 3-8-II pool which was discovered in 1986. This well was perforated in the Verulam Formation and was put on production in 1988. The reservoir is referred to by the operator as the Yellow Creek pool.

Two other new Ordovician oil pools were reported discovered in Maidstone Township in Essex County, and Tilbury East Township in Kent County. Cons/Ram 34246 Maidstone 7-17-V was reported as an oil producer from the Verulam Formation but was suspended after completion and testing. In Tilbury East Township in Kent County, Ram 94 Tilbury East 1- 24-IX was reported as new pool oil discovery. Drilling was completed on Jan.30, 1987, and the well was perforated in the Verulam Formation at a depth interval of 852 to 855 metres. It produced 140.1 m^3 of oil in 1987. The well has produced only 3.3 m^3 of oil since 1987. Additional holes were drilled near both discoveries to test for possible extensions, but without success.

Pembina Dia-Sham Anderdon 8-11-VI, an exploratory well targeted on Ordovician strata, resulted in discovery of a new gas-producing zone in Silurian dolomites of the E and F units of Salina Group. The hole was lost at 302.5 m after encountering a considerable flow of natural gas at 289 m. Two subsequent wells (Table 2, nos. 12 and 13) targeted on Ordovician prospects also encountered natural gas in this zone and were initially reported as potential gas producers. However after a period of testing and assessment both wells were plugged and abandoned.

Drilling in Lake Erie continued at the much reduced levels of 1986. Only 6 development wells were drilled in the lake in 1987, with an additional hole lost at 131.1 m. Two of the wells were completed as gas producers in Silurian sandstone and 2 were completed as gas producers in dolomitized Guelph Formation reefs.

There was a significant increase in the amount of geophysical and geochemical exploration in Ontario in 1987. Surveys were completed by a total of 15 companies and included 1,164.3 km of seismic, 278.2 km of gravity, and 4,057.1 km of geochemical surveys.

No additional development was undertaken at the experimental horizontal oil-drainage project operated by Devran Petroleum of London, Ontario, and Shell Canada Resources in the abandoned Devonian Sarnia-London Road oil pool. Excessive production of formation water is reported to be causing problems at the project. An announcement regarding the future of the project is expected early in 1988.

The Ontario government completed the sale of the assets of Onexco in Ontario in 1987. The assets were purchased by Devran Petroleum for a total of $1.7 million, which included a 16 2/3% interest in the Hillman oil pool.

On November 9, 1987, Paladin Petroleum Corporation, CCNR Petroleum Corporation, and E.P. Rowe Oil amalgamated under the name of PPC Oil and Gas Corporation.

Ram Petroleums announced that it had entered into an agreement with B.P. Canada whereby B.P. is purchasing $500,000 of Ontario seismic and has committed to spend $2 million in 1988 on Ram's undeveloped oil and gas leases in Essex County and a portion of Kent County in order to earn a 16 2/3% interest in approximately 25,500 ha. B.P. has an option to earn an additional 16 2/3% in the leases in each of 1989 and 1990 by making yearly expenditures of $2.2 million.

III. Leasing

1. LICENCES

The number of licences to lease oil and gas rights in Ontario issued in 1987 decreased marginally to a total of 160, compared to 162 issued in 1986 (Table I-1).

2. ACTIVITY

A. Onshore–Southwestern Ontario

With only a few exceptions mineral rights in onshore portions of southwestern Ontario are held by the surface rights owner. Exploration companies must negotiate a lease on the oil and gas rights with the landowner in order to conduct exploration and/or produce oil and gas. The Province of Ontario does not collect royalties on production from freehold lands in the province, and at the present time there is no production from Crown land in onshore areas.

In 1987, 50,298.1 hectares of oil and gas rights were acquired on land in Ontario, down 19% from the previous year (Table 3). The figures in Table 3 represent only new hectares leased on freehold lands, and therefore do not reflect the total number of hectares under lease and do not include assignments. The area leased increased in Lambton, Huron, Middlesex, and Elgin Counties. There were significant decreases in the amount of new land leased in Essex and Kent Counties.

B. Offshore–Lake Erie

The Petroleum Resources Section, under the authority of Ontario Regulation 634 of the Mining Act, adminis-

TABLE 3: HECTARES LEASED ONSHORE, 1982 TO 1987.

County	1982	1983	1984	1985	1986	1987
Brant	388.5	--	--	--	--	--
Bruce	1018.2	--	485.6	87.4	--	--
Durham	--	54.2	60.7	--	--	--
Elgin	3258.3	19273.9	17739.2	5676.4	996.3	2894.7
Essex	4139.7	5310.8	5369.4	41231.2	31900.9	11523.2
Grey	--	809.4	--	--	--	--
Haldimand	235.5	--	260.6	--	--	--
Halton	--	--	--	0.2	0.2	0.2
Huron	5739.5	12101.7	1999.3	1539.0	2194.8	4895.1
Kent	13696.8	7739.0	24649.3	8703.3	13738.7	9166.9
Lambton	22249.7	28001.7	21926.6	19464.6	10158.1	12832.3
Lincoln	4.0	40.5	--	--	--	70.8
Manitoulin Island	60.7	288.5	--	--	--	--
Middlesex	1418.0	2251.6	3313.8	7281.3	1080.3	5524.2
Norfolk	3976.8	1660.8	2107.9	4439.8	1890.7	1975.5
Oxford	357.7	141.6	111.5	519.6	20.2	168.8
Perth	--	--	--	--	--	--
Victoria	--	--	--	--	--	--
Welland	183.7	4.0	389.3	4.1	4.1	4.0
Wellington	184.5	517.6	--	--	--	--
Wentworth	--	--	--	--	--	--
TOTAL	56911.6	78194.3	78413.2	88947.0	61984.4	50298.1

TABLE 4: LAKE ERIE HECTARES UNDER DISPOSITION 1963–1987.

YEAR	LICENCES OF OCCUPATION	PRODUCTION LEASES	TOTAL HECTARES	YEAR	LICENCES OF OCCUPATION	PRODUCTION LEASES	TOTAL HECTARES
1963	n/a	n/a	466247.6	1976	1019282.2	74256.5	1093538.7
1964	n/a	n/a	n/a	1977	999396.0	94132.8	1093538.7
1965	n/a	n/a	n/a	1978	961746.0	157274.3	1119020.3
1966	n/a	n/a	259493.1	1979	887280.9	212918.7	1100199.6
1967	n/a	n/a	1257782.2	1980	889578.0	215002.0	1104580.0
1968	n/a	n/a	1257631.3	1981	667110.0	279529.0	946639.0
1969	n/a	n/a	1256819.5	1982	843068.0	301109.0	1144177.0
1970	n/a	n/a	828671.8	1983	471416.0	294022.0	770438.0
1971	n/a	n/a	656906.1	1984	766823.9	301229.3	1068053.2
1972	594437.6	62236.3	656673.9	1985	730731.3	308621.8	1039353.1
1973	962821.6	64503.8	1027352.4	1986	345785.6	346870.5	692656.1
1974	1011015.2	71206.1	1082221.3	1987	268539.1	351069.5	619617.9
1975	1021269.2	74256.5	1093538.7				

ters the disposition of Licences of Occupation and Production Leases in transactions involving Crown land in Lake Erie. By international agreement, drilling is restricted to the portion of Lake Erie east of a line taken from Point Pelee, Ontario to Marble Head, Ohio. As well, production from the other parts of the lake is limited to natural gas.

Approximately 1.1 million hectares (2.7 million acres) are available for exploration on Lake Erie. Table 4 shows the number of hectares under disposition during the period 1963-1987. In 1987, 268,539.1 hectares were held under Licences of Occupation, and 351,069.5 hectares were held under Production Leases, for a total of 619,617.9 hectares. This is a decline of 10% from the previous year and reflects decreased exploration interest in Lake Erie. Approximately 480,000 ha were available for disposition at year end.

Rental payments to the Crown in 1987 were $99,536.09 for Licences of Occupation and $582,556.44 for Production Leases. The total, $682,092.53, represented a decrease of 3% from rent collected in 1986. Royalty payments received by the Crown for the year amounted to $3,718,508.10, representing a 23% decrease from the $4,814,671.97 collected in 1986.

Total revenue for all royalties and rent for the year was $4,400,600.63 compared to $5,517,540.85 collected in 1986.

C. Hudson and James Bay Lowlands

Administration of licensing and leasing of oil and gas rights on Crown land in the Hudson and James Bay Lowlands is performed by the Petroleum Resources Section and personnel of Moosonee District, Ministry of Natural Resources, under Regulation 603, R.S.O. 1970. This statute regulates Licences of Occupation on Crown lands north of the fifty-first parallel of latitude.

All licences and leases previously held in this area have expired. No new licences or leases were issued in 1987.

IV. Geophysical and Geochemical Activity

1. LICENCES

Forty-seven licences to conduct geophysical or geochemical exploration for oil and natural gas in Ontario were issued in 1987 (Table I-2).

2. ACTIVITY

Geochemical exploration in Ontario in 1987 declined dramatically (Table 5) compared to 1986, due principally to fewer water well sampling programs completed by B.G. Environmental Surveys Ltd. The projects completed in 1987 were centred in Huron, Bruce, and Perth Counties, whereas in the previous 2 years activity has been concentrated in Essex, Kent, Lambton, Middlesex, and Oxford Counties. One soil sampling program was completed in Plympton Township in Lambton County in 1987.

There was a very large increase in the amount of seismic and gravity exploration programs completed in 1987. Three gravity surveys totalling 123 km were completed in West Williams, East Williams, and Bosanquet Township in Middlesex County by Chemical Projects Limited. Ram Petroleums Ltd. completed a gravity survey totalling 140.6 km in Moore Township of Lambton County.

A total of 60 seismic surveys were completed in Ontario in 1987, for a total of 1146.3 kilometres, almost triple the amount of activity in 1986. Twenty-three programs totalling 266.7 km using dynamite as the energy source were completed in 1987, all of which used Cangeo Ltd as the contractor. The remainder of the pro-

TABLE 5: GEOPHYSICAL AND GEOCHEMICAL EXPLORATION, 1984–1987.

METHOD	COUNTY	1984		1985		1986		1987	
		Km	ha	Km	ha	Km	ha	Km	ha
GEOCHEMICAL	Brant	--	18716	--	--	--	1300	--	--
	Elgin	396.0	56608	--	42325	--	59800	--	--
	Essex	256.9	--	--	169661	--	167600	--	--
	Halton	--	--	--	--	--	2000	--	--
	Hamilton-Wentworth	--	--	--	--	--	33600	--	--
	Huron-Bruce	--	--	850.0	--	--	65000	--	376100
	Kent	107.7	--	--	177158	--	216000	--	--
	Lambton	233.8	--	278.6	276248	--	132800	17.6	--
	Middlesex	290.1	92226	--	150122	--	221400	--	--
	Norfolk	--	39803	--	--	--	--	--	--
	Oxford	290.0	58914	--	113789	--	117800	--	--
	Perth	--	--	--	--	--	116900	--	77300
	Waterloo	--	--	--	--	--	80600	--	1700
	Wellington	--	--	--	--	--	20900	--	9200
Total		1574.5	266267	1128.6	929303	--	1235700	17.6	464300
GRAVITY	Lambton	--	--	--	--	--	--	140.6	--
	Middlesex	--	--	--	--	--	--	123.0	--
Total		--	--	--	--	--	--	263.6	--
RADIOMETRIC	Kent	--	--	50.0	--	--	--	--	--
	Lambton	--	--	--	--	81.7	--	--	--
Total		--	--	50.0	--	81.7	--	--	--
SEISMIC	Elgin	90.1	--	101.2	--	50.0	--	15.3	--
	Essex	55.1	--	664.8	--	222.3	--	535.4	--
	Huron	--	--	--	--	4.8	--	11.1	--
	Kent	74.0	--	66.5	--	118.3	--	432.2	--
	Lake Erie	372.0	--	--	--	--	--	--	--
	Lambton	91.9	--	131.3	--	21.7	--	128.5	580
	Middlesex	4.3	--	12.6	--	--	--	7.9	--
	Norfolk	1.0	--	--	--	--	--	--	--
	Oxford	--	--	--	--	--	--	15.9	--
Total		688.8	--	976.4	--	417.1	--	1146.3	--
CSAMT	Essex	--	--	--	--	--	--	6.6	--
	Lambton	--	--	--	--	--	--	4.0	--
Total		--	--	--	--	--	--	10.6	--
TOTAL		2263.3	266267	2189.0	929303	417.1	1235700	1438.1	464880

grams utilized airguns, with Ecoseis Exploration Ltd acting as the contractor.

Most of the seismic data was acquired in support of exploration directed at Ordovician targets, principally in Essex and Kent Counties. Fifteen surveys totalling 432.2 km were completed in Kent County. Twenty-two surveys totalling 535.4 km were completed in Essex County. Eighteen seismic programs totalling 128.5 km were completed in Lambton County, most of which was probably directed at Silurian pinnacle reef targets. One 3D seismic survey, the first in Ontario, was completed by Union Gas Ltd. over the Dawn 167 natural gas storage pool in Dawn Township, a depleted pinnacle reef. The survey was intended to serve as a guide to establishing drilling locations for new storage wells planned for completion in 1988.

V. Drilling

1. LICENCES

Licences were issued to owners of 66 machines for boring, drilling, or plugging wells in 1987 (Table I-3).

2. PERMITS

A total of 108 drilling permits were issued in 1987, compared to 128 in 1986.

3. ACTIVITY

A total of 107 wells were drilled in Ontario in 1987 for a combined drilled length of 58,870.9 metres (Table 6). This is comparable to the activity level recorded for 1986, but is a major decline compared to 1985 and the immediately preceding years when an average of 200 wells were drilled in Ontario each year. A total of 45 exploratory wells and 33 development wells were drilled in 1987 compared to 60 exploratory and 28 development wells in 1986. Twenty percent of the exploratory wells and 58% of the development wells were successfully completed as oil or gas producers.

Drilling in Lake Erie continued at the much reduced levels of 1986 (Table 7, Figure 4). Only 7 development wells were drilled in the lake in 1987, with an additional hole lost at 131.1 m. Three of the wells were completed as gas producers in Silurian sandstone and 2 were completed as gas producers in dolomitized Guelph Formation reefs.

Exploration for and development of Ordovician oil and gas reservoirs again was the highlight of activity in Ontario in 1987 (Table 8). A total of 18 exploratory wells testing Ordovician targets were drilled in 1987, resulting in 4 oil producers and 1 gas producer for a success rate of 28%. Two other wells were initially reported as oil producers but both were subsequently suspended. Eleven of the exploratory wells were located in Essex County, 6 were in Kent County, and 1 well was drilled on Manitoulin Island.

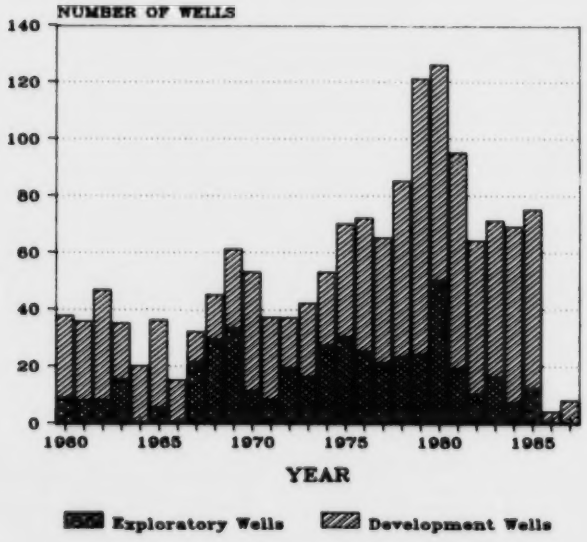

Figure 4. Exploratory and development wells drilled annually in Lake Erie, 1960-1987.

Two new Ordovician pools were discovered in Romney Township in 1987. Consumers' et al 34281 Romney 6-13-III reached total depth on July 30 and resulted in discovery of an important new oil pool referred to by the operator as the Renwick South pool. The well was drilled to a total depth of 1105 metres in Precambrian basement rocks, and was completed for production in a perforated interval from 834.5 to 852.3 metres K.B. in the Verulam Formation. Another new Ordovician pool was discovered on December 6 by Consumers' et al 34340 Romney 7-10-II, immediately northeast of the Romney 3-8-II pool which was discovered in 1986. This well was perforated in the Verulam Formation and was put on production in 1988. The reservoir is referred to by the operator as the Yellow Creek pool.

Two exploratory and one development well targeted on Ordovician strata were drilled in Maidstone Township in Essex County in 1987. Cons/Ram 34246 Maidstone 7-17-V was reported as an oil producer from the Verulam Formation but was suspended after completion and testing. Two additional wells drilled to test for extensions of the oil-bearing zone encountered oil shows but both were eventually plugged and abandoned (Appendix V).

In Mersea Township two successful exploratory wells were completed which are western extensions to the boundaries of the Mersea 6-23-VII pool. Cons et al 34150 Mersea 2-10- VII was completed on August 13, and Ram 99 Mersea 7-19-VIII was completed on December 18, 1987. Both wells were completed for production within the upper part of the Trenton Group. One development well, Cons et al 34105 Mersea 3-11-I, was successfully completed as an oil producer in the Hillman pool on August 26. Another development well, Cons et al 34103 Mersea 2-15-B, was completed as an oil producer in the Verulam Formation on Jan.14 on the southeasterly extension of the Hillman fault zone. The well is believed to have intersected an accumulation of hydrocarbons separate from the Hillman pool.

In Tilbury East Township in Kent County, Ram 94 Tilbury East 1-24-IX was reported as new pool oil discovery. Drilling was completed on Jan.30, 1987, and the well was perforated in the Verulam Formation at a depth interval of 852 to 855 metres. It produced 140.1 m^3 of oil in 1987. The well has produced only 3.3 m^3 of oil since 1987. Two exploratory wells testing for an extension of the hydrocarbon-bearing interval were drilled in 1987. Ram 96 Tilbury East 6-24-IX, completed on July 18, 1987, was reported as an oil show and is currently sus-

TABLE 6: SUMMARY OF DRILLING IN 1987.

		EXPLORATORY						DEVELOPMENT						SERVICE		TOTAL	
COUNTY	TOWNSHIP	GAS	OIL	DRY	SUSP	TOTAL WELLS	TOTAL METRES	GAS	OIL	DRY	SUSP	TOTAL WELLS	TOTAL METRES	TOTAL WELLS	TOTAL METRES	WELLS	METRES
Elgin	Aldborough			1		1	48.5									1	48.5
Essex	Anderdon			2		2	2244.0							2	743.7	4	2987.7
	Colchester N.			1		1	1074.0									1	1074.0
	Gosfield S.			2		2	2098.0									2	2098.0
	Maidstone			1	1	2	2243.0			1		1	1120.0			3	3363.0
	Mersea		2	2		4	3633.0		2			2	1744.8			6	5377.8
	Sandwich S.			1		1	485.5									1	485.5
	Fighting Island													3	1064.4	3	1064.4
Huron	Goderich			1		1	598.0									1	598.0
	Stanley			2		2	1227.7									2	1227.7
Kent	Camden			4		4	985.9									4	985.9
	Chatham								1	3		4	2160.5			4	2160.5
	Dover	1				1	1176.0									1	1176.0
	Romney		2			2	2211.0									2	2211.0
	Tilbury East			2	1	3	3345.4									3	3345.4
	Zone									1		1	137.2	2	319.9	3	457.1
Lambton	Brooke			1		1	605.0									1	605.0
	Dawn			2		2	615.9		3	1		4	2287.4	6	2793.5	12	5696.8
	Enniskillen			4		4	2111.1							1	184.4	5	2295.5
	Moore			3		3	2176.1		1			1	157.0	8	5490.5	12	7823.6
	Sarnia													4	2441.8	4	2441.8
	Sombra			1		1	679.1							2	1293.0	3	1972.1
	Warwick								4	2		6	906.4	1	182.9	7	1089.3
Manitoulin	Sandfield			1		1	252.6									1	252.6
Middlesex	McGillivray			1		1	567.0									1	567.0
	Metcalfe			1		1	143.3									1	143.3
Norfolk	Charlotteville							2				2	780.5			2	780.5
	Houghton							1				1	446.5			1	446.5
	N. Walsingham	1				1	402.3			1		1	427.0			2	829.3
Oxford	Blandford	1				1	882.4									1	882.4
	Blenheim									1		1	894.6			1	894.6
Wentworth	Binbrook	1				1	146.6									1	146.6
	Glanford	1				1	153.9									1	153.9
SUBTOTALS		5	4	33	2	44	30105.3	3	11	10		24	11061.9	29	14514.1	97	55681.3
Lake Erie								5		2		7	2723.4			7	2723.4
Lost Holes	Anderdon					1	302.5									1	302.5
	Lake Erie											1	131.1			1	131.1
	Warwick											1	32.6			1	32.6
TOTAL		5	4	33	2	45	30407.8	8	11	12	0	33	13949.0	29	14514.1	107	58870.9

TABLE 7: LAKE ERIE DRILLING STATISTICS

Year	EXPLORATORY				DEVELOPMENT				SERVICE					
	Wells	Metres	Cumul. Wells	Cumul. Metres	Wells	Metres	Cumul. Wells	Cumul. Metres	Wells	Metres	Total Wells	Cumul. Wells	Metres Drilled Metres	Cumul. Total
1960	9	4232	9	4232	29	10462	29	10462	0	0	38	257	14693	14693
1961	8	2626	17	6857	28	9141	57	19603	0	0	36	293	11767	26461
1962	8	3097	25	9954	39	13292	96	32895	0	0	47	340	16388	42849
1963	15	6286	40	16240	20	7116	116	40011	0	0	35	375	13402	56251
1964	0	0	40	16240	20	6551	136	46563	0	0	20	395	6551	62803
1965	5	1676	45	17916	31	10211	167	56774	0	0	36	431	11888	74691
1966	0	0	45	17916	15	5552	182	62326	15	1211	30	461	6763	81454
1967	21	10021	66	27938	11	3954	193	66280	0	0	32	493	13975	95429
1968	29	14477	95	42415	16	6709	209	72989	0	0	45	538	21186	116615
1969	33	18370	128	60785	28	10389	237	83378	5	2151	66	604	30909	147524
1970	11	6771	139	67556	42	20219	279	103596	0	0	53	657	26990	174514
1971	8	4192	147	71747	29	15745	308	119342	0	0	37	694	19937	194451
1972	19	11841	166	83589	18	9464	326	128806	0	0	37	731	21306	215757
1973	16	9781	182	93370	26	13286	352	142092	0	0	42	773	23068	238824
1974	27	12103	209	105473	26	12948	378	155040	0	0	53	826	25051	263875
1975	30	13684	239	119157	40	16649	418	171689	0	0	70	896	30332	294207
1976	25	14141	264	133298	47	19068	465	190757	0	0	72	968	33209	327416
1977	21	13767	285	147064	44	24792	509	215549	0	0	65	1033	38559	365975
1978	23	15152	308	162216	62	31114	571	246663	0	0	85	1118	46266	412241
1979	24	14360	332	176576	97	52018	668	298681	0	0	121	1239	66378	478619
1980	50	29657	382	206234	76	45502	744	344182	0	0	126	1365	75159	553778
1981	19	9349	401	215583	76	36268	820	380450	0	0	95	1460	45617	599395
1982	10	4848	411	220431	54	24488	874	404938	0	0	64	1524	29336	628731
1983	16	7532	427	227963	55	25101	929	430039	0	0	71	1595	32633	661364
1984	7	3671	434	231635	62	27450	991	457489	0	0	69	1664	31121	692485
1985	12	11291	446	242925	63	28155	1054	485643	0	0	75	1739	39445	731930
1986	0	0	446	242925	4	1183	1058	486826	0	0	4	1743	1183	733113
1987	0	0	446	242925	8	2854	1066	489680	0	0	8	1751	2854	735967

TABLE 8: DRILLING SUMMARY BY TARGET, 1987

	EXPLORATORY WELLS					DEVELOPMENT WELLS				SERVICE	TOTAL	METRES DRILLED
AGE	OIL	GAS	DRY	SUS	SUCCESS %	OIL	GAS	DRY	SUCCESS %			
Devonian	0	0	5	0	0.0	5	0	4*	55.6	6	20	2979.9
Clinton–Cataract	0	3	0	0	100.0	0	6	3*	66.7	0	12	3983.8
Salina–Guelph	0	0	17	0	0.0	4	2	5	54.5	23	51	29028.4
Ordovician	4	1	11*	2	27.8	2	0	1	66.7	0	21	21053.3
Cambrian	0	1	1	0	50.0	0	0	1	0.0	0	3	1825.5
TOTAL	4	5	34	2	20.0	11	8	14	57.6	29	107	58870.9

* *includes 1 lost hole*

pended. Ram 97 Tilbury East 3-23-IX was completed on August 4, 1987, and was reported to be a dry hole - plugged and abandoned.

In Dover Township one well was completed as a gas producer in the Verulam Formation in an exploratory extension of the Dover 7-5-V E pool. Drilling was completed on December 22, 1987. There was no development drilling in the Dover 7-5-V E pool in 1987.

Two exploratory wells and 1 development well were drilled to test Cambrian targets in 1987. One of the exploratory wells, Riley/Northquest Blandford 5-7-VIII (Table 1, Figure 3), was successfully completed as a gas producer from Cambrian sandstone in an extension of the new Blandford 3-7-VIII pool, which was discovered in 1986 northwest of the Innerkip gas pool. Initial production rates for the well are not known, but the discovery well, Innerkip 4 Blandford 3-7-VIII, produced an average of 7,611 m^3/day of gas during a 90-day test in the last 3 months of 1987. The other 2 Cambrian tests drilled in 1987 were unsuccessful.

Pembina Dia-Sham Anderdon 8-11-VI, an exploratory well targeted on Ordovician strata, resulted in discovery of a new gas-producing zone in Silurian dolomites of the E and F units of Salina Group. The hole was lost at 302.5 m after encountering a considerable flow of natural gas at 289 m. Two subsequent wells (Table 2,nos. 12 and 13) targeted on Ordovician prospects also encountered natural gas in this zone and were initially reported as potential gas producers. However after a period of testing and assessment both wells were plugged and abandoned.

One exploratory well and 4 development wells were completed in Norfolk County in the long-lived Silurian sandstone play. The exploratory well, F&M 13 North Walsingham 8-13- VII, was completed as a gas producer in the Thorold and Grimsby Formations, in an extension of the Norfolk gas pool. Three of the development wells were completed as gas producers in sandstone of the Thorold Formation or the Grimsby Formation or both. Two exploratory wells in Wentworth County were also successfully completed as Silurian gas producers in sandstone of the Whirlpool Formation. Both wells are extensions of the Haldimand gas pool.

Relatively accurate drilling statistics are available for the period 1955 to 1987 (Table 9, Figure 5 and 6). During that time 2,887 exploratory, 3,635 development, and 815 service wells were drilled for a total of 7,337 wells. Total meterage amounted to 3,453,863 metres with an average depth of 470.7 metres.

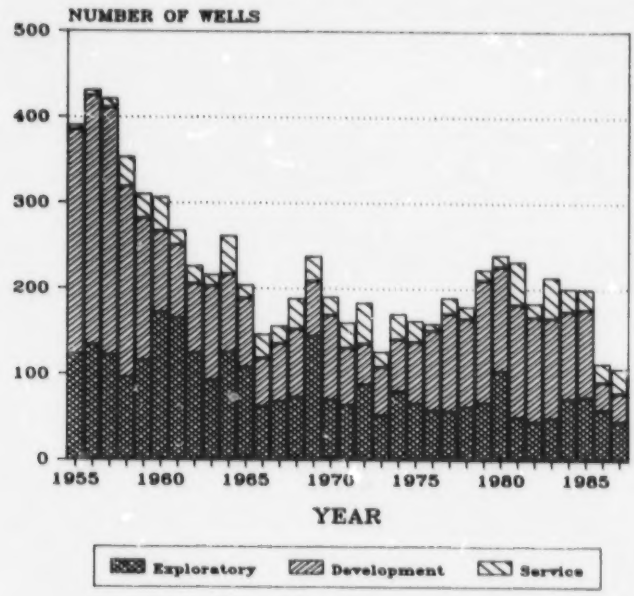

Figure 5. Exploratory, development, and service wells drilled annually in Ontario, 1955- 1987.

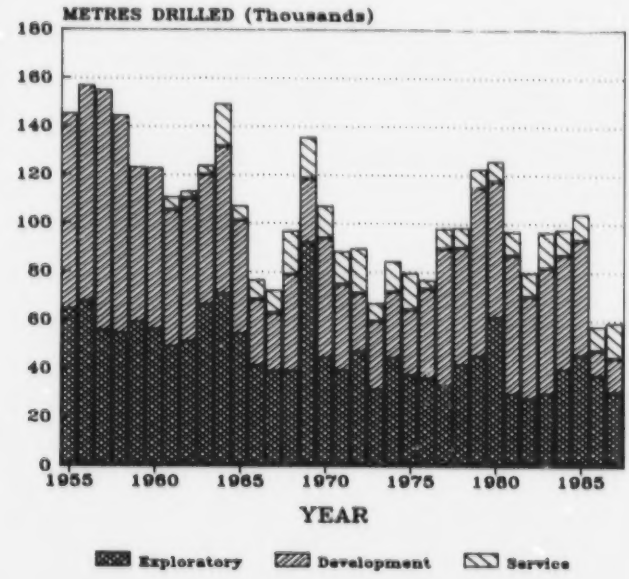

Figure 6. Exploratory, development, and service metres drilled annually in Ontario, 1955- 1987.

TABLE 9: TOTAL DRILLING STATISTICS 1955 – 1987.

	EXPLORATORY					DEVELOPMENT					SERVICE								
year	wells	metres	ave. depth	cum. wells	cum. metres	wells	metres	ave. depth	cum. wells	cum. metres	wells	metres	ave. depth	cum. wells	cum. metres	total wells	cum. wells	total metres	cum. metres
1955	123	64414.6	523.7	123	64414.6	261	80662.0	309.0	261	80662	6			6	0.0	390	390	145076.6	145077
1956	134	67556.5	504.2	257	131971.1	290	89085.4	307.2	551	169747	7			13	0.0	431	821	156641.9	301718
1957	122	55660.4	456.2	379	187631.5	288	99079.5	344.0	839	268827	11			24	0.0	421	1242	154739.9	456458
1958	96	54504.3	567.8	475	242135.9	222	89702.0	404.1	1061	358529	35			59	0.0	353	1595	144206.4	600665
1959	116	59050.4	509.1	591	301186.3	165	63743.4	386.3	1226	422272	29			88	0.0	310	1905	122793.9	723459
1960	172	56107.6	326.2	763	357293.9	94	66373.5	706.1	1320	488646	40			128	0.0	306	2211	122481.1	845940
1961	165	49057.9	297.3	928	406351.8	85	56042.0	659.3	1405	544688	17	5473.0	21.9	145	5473.0	267	2478	110572.9	956513
1962	124	51013.5	411.4	1052	457365.3	81	58906.2	727.2	1486	603594	21	3062.0	145.8	166	8535.0	226	2704	112981.7	1069494
1963	93	66324.5	713.2	1145	523689.8	109	53386.6	489.8	1595	656981	14	3849.3	275.0	180	12384.3	216	2920	123560.4	1193055
1964	125	70824.5	566.6	1270	594514.3	91	60567.1	665.6	1686	717548	45	17738.8	394.2	225	30123.1	261	3181	149130.4	1342185
1965	108	54310.5	502.9	1378	648824.8	80	46476.5	581.0	1766	764024	16	6157.6	384.8	241	36280.6	204	3385	106944.6	1449130
1966	62	41181.8	664.2	1440	690006.6	56	27066.2	483.3	1822	791090	28	8074.5	288.4	269	44355.1	146	3531	76322.5	1525452
1967	68	38874.5	571.7	1508	728881.1	67	23815.8	355.5	1889	814906	21	9427.2	448.9	290	53782.3	156	3687	72117.5	1597570
1968	73	38823.3	531.8	1581	767704.4	79	39819.6	504.0	1968	854726	36	17955.5	498.8	326	71737.7	188	3875	96598.4	1694168
1969	144	91881.4	638.1	1725	859585.8	64	26345.9	411.7	2032	881072	29	16974.9	585.3	355	88712.6	237	4112	135202.2	1829370
1970	70	44411.2	634.4	1795	903997.0	98	49069.7	500.7	2130	930141	22	13434.7	610.7	377	102147.3	190	4302	106915.6	1936286
1971	64	39196.1	612.4	1859	943193.1	66	35323.5	535.2	2196	965465	30	13657.2	455.2	407	115804.5	160	4462	88176.8	2024463
1972	88	46991.9	534.0	1947	990185.0	47	23914.9	508.8	2243	989380	48	18445.9	384.3	455	134250.4	183	4645	89352.7	2113815
1973	52	31497.4	605.7	1999	1021682.4	56	27853.5	497.4	2299	1017233	18	7496.6	416.5	473	141746.9	126	4771	66847.5	2180663
1974	80	44415.2	555.2	2079	1066097.6	60	27143.9	452.4	2359	1044377	30	12602.6	420.1	503	154349.5	170	4941	84161.7	2264824
1975	66	37428.5	567.1	2145	1103526.1	71	26727.6	376.4	2430	1071105	25	15203.1	608.1	528	169552.6	162	5103	79359.2	2344184
1976	58	36088.3	622.2	2203	1139614.4	92	36600.9	397.8	2522	1107706	9	3804.5	422.7	537	173357.1	159	5262	76493.7	2420677
1977	57	33405.8	586.1	2260	1173020.2	113	55861.0	494.3	2635	1163567	19	8505.4	447.7	556	181862.6	189	5451	97772.2	2518450
1978	62	41724.1	673.0	2322	1214744.3	102	47902.9	469.6	2737	1211470	15	8448.8	563.3	571	190311.3	179	5630	98075.8	2616525
1979	67	45280.9	675.8	2389	1260025.2	142	69122.3	486.8	2879	1280592	13	7899.7	607.7	584	198211.0	222	5852	122302.9	2738828
1980	104	61244.1	588.9	2493	1321269.3	121	55954.2	462.4	3000	1336546	14	8383.5	598.8	598	206594.5	239	6091	125581.8	2864410
1981	50	29798.2	596.0	2543	1351067.5	131	56822.9	433.8	3131	1393369	50	9860.1	197.2	648	216454.6	231	6322	96481.2	2960891
1982	45	27813.2	618.1	2588	1378880.7	121	41890.9	346.2	3252	1435260	17	9772.0	574.8	665	226226.6	183	6505	79476.1	3040367
1983	49	29920.0	610.6	2637	1408800.7	116	51383.0	443.0	3368	1486643	48	14867.0	309.7	713	241093.6	213	6718	96170.0	3136537
1984	72	39874.4	553.8	2709	1448675.1	101	46725.5	462.6	3469	1533368	27	10558.1	391.0	740	251651.7	200	6918	97158.0	3233695
1985	74	45659.0	617.0	2783	1494334.1	101	47161.4	466.9	3570	1580530	24	11023.7	459.3	764	262675.4	199	7117	103844.1	3337539
1986	59	37284.3	631.9	2842	1531618.4	32	10226.3	319.6	3602	1590756	22	9941.9	451.9	786	272617.3	113	7230	57452.5	3394992
1987	45	30407.8	675.7	2887	1562026.2	33	13949.0	422.7	3635	1604705	29	14514.1	500.5	815	287131.4	107	7337	58870.9	3453863

VI. Production

1. LICENCES

In 1987, 145 licences to produce oil and gas in Ontario were issued, compared to 151 in 1986. Table I-4 lists persons licensed to produce oil and gas in 1987.

2. OIL PRODUCTION

Oil production in Ontario in 1987 was essentially unchanged from 1986. Ontario produced 135,635.4 m^3 in 1987, compared to 135,816.3 m^3 in 1986 (Tables 10,11). There were 1,176 oil wells for which production was reported in Ontario in 1987, with an average production of 115 m^3 per well. Ordovician wells were the most productive, with an average reported production of 1,195.2 m^3 from each of 53 active wells.

Geographically Essex County led all other parts of Ontario in oil production, for the second year in a row, accounting for 35.5% of the 1987 total. Essex was followed by Lambton, Elgin, and Kent Counties (see Table 10, Figure 7). The Hillman pool in Essex County was the largest producing pool in 1987, with reported production of 40,892.8 m^3, approximately 30% of the total for the province. The 12 active wells in the Hillman pool produced an average of 3,408 m^3 per well.

Geologically, in 1987, for the third year in a row, Ordovician reservoirs produced more oil than any other hydrocarbon-bearing strata in Ontario. Ordovician production totalled 63,346.0 m^3 in 1987, accounting for 46.7% of total Ontario production (Table 11, Figure 8). Devonian oil pools contributed 25.1% of the total oil produced, followed by Silurian Salina-Guelph pools with 23.2% and Cambrian with 5.0%. Production from Ordovician pools is expected to dominate oil production in Ontario for at least the next several years.

All oil produced in Ontario is purchased by Esso Petroleum Canada, a division of Imperial Oil Limited, for processing through its Sarnia refinery. Prior to August 1, 1987, Ontario crude oil was delivered for Esso's account to the facilities of the Harold Marcus Limited Terminal in Sarnia. Esso Canada's posted prices prior to August 1 reflect deduction of BS&W testing fees and a terminalling fee. Effective August 1, 1987, Harold Marcus Limited ceased operations and the new Marcus Terminal Inc. commenced operation. Crude oil is now received by Marcus Terminal Inc., and delivered to Esso Petroleum Canada's custody transfer facility located adjacent to the terminal. Esso Canada posted prices for Ontario crude oil post-dating August 1 no longer include the deduction for BS&W testing or the terminalling fee. The net effect of this change was a one-time increase in posted prices for Ontario crude of $0.825 per cubic metre. Esso Canada posted prices for "Mersea Township" crude oil for the period June 1, 1985 to Jan.8, 1988 are listed in Table 12 and Figure 9.

Esso Petroleum Canada reports that oil valued at $20,687,943 was delivered from Ontario producers, for its account, to its terminal facilities in Sarnia in 1987. The average calculated price received by Ontario producers was $152.53/$m^3$. This was an increase from 1986 when Ontario oil producers received only $17,294,343, for an average price of $127.34/$m^3$. However, revenues are still significantly less than the $26,444,968 received in 1985.

Historical data on production of oil in Ontario are summarized in Table 13 and Figures 10 and 11.

3. NATURAL GAS PRODUCTION

Production of natural gas in 1987 amounted to 511,326.8 thousand m^3. This consisted of 389,998.9 thousand m^3 from wells on Lake Erie, and 121,327.9 thousand m^3 from wells on land. Lambton County accounted for the bulk of onshore production. Both totals represent minor declines from 1986 totals (see Table 14, Fig.12).

The most productive gas pools in 1987 were once again the Maitland Pool (Lake Erie) with 24.5% of total production, and the Morpeth Pool (Lake Erie) with 19.6% of total production. Both these pools produce from Lower Silurian sandstones. The largest onshore production was derived from the Norfolk Pool, also from Lower Silurian sandstones.

Geologically, as in the previous 5 years the bulk of the natural gas production in 1987 was derived from Lower Silurian sandstones of the Grimsby Formation and the overlying Thorold Formation, with some contribution from sandstones of the Whirlpool Formation and carbonates of the Reynales Formation. Reservoirs consist of porosity and permeability pinchouts in the sandstone units. Production from these "Clinton-Cataract" reservoirs accounted for 59.2% of total Ontario production in 1987 (see Table 15, Figure 13). Most of the remaining gas production was derived from dolomitized reefal carbonates of the Guelph Formation and associated zones of porosity and permeability in the Salina A-1 Carbonate Unit and A-2 Carbonate Unit.

There were 1,251 active gas wells in Ontario in 1987. Average production per well in 1987 was 409 thousand m^3, approximately the same as 1986. The average price paid by Union Gas Ltd. to Ontario producers in 1987 was $119.22 per thousand m^3. Based on this price the total value of Ontario production in 1987 is estimated to be $61.0 million. For comparison, in 1986 the average price paid to Ontario producers was $129.00 per thousand m^3 for total revenue of approximately $68.6 million.

Historical data on production of natural gas in Ontario is summarized in Table 16 and 17, and Figures 14 to 16 inclusive. Cumulative production of natural gas in Ontario for the period 1905-1987 totalled 27,650,097 thousand m^3.

TABLE 10: OIL PRODUCTION BY POOL OR FIELD, 1987

County	Pool Name	Active Wells	Production 1987 m^3	Operator 1987
ELGIN	Aldborough 4-A-VIII	1	6.9	Realoil
	Dunwich 16-I	2	222.1	Den-mar
	Dunwich 18-I	1	34.0	Den-mar
	Rodney	48	9403.1	Canadian Occ.
		81	8572.9	Rayrock
	Wallacetown	6	126.9	PPC
	Willey	8	3298.8	Judo
	Subtotal	147	21664.7	
	% of Ont. total		16.0%	
ESSEX	Colchester	5	543.2	Gaiswinkler
		1	351.9	Putnam
	Gosfield South	8	702.4	Gaiswinkler
	Gosfield South 1-1-III	1	9.1	Consumers
	Gosfield South 8-7-V	1	15.9	Consumers
	Hillman	12	40892.8	Consumers
	Malden	4	265.4	Gaiswinkler
	Malden 3-41-IV	1	90.8	Gaiswinkler
	Maidstone 7-17-V	1	16.0	Consumers
	Mersea 2-15-B	1	3877.8	Consumers
	Mersea 7-15-A	1	12.0	Consumers
	Mersea 6-16-B	1	390.3	Polysteel
	Mersea 6-23-VII	1	805.1	Consumers
	Staples	1	124.0	Brett
	Subtotal	39	48096.8	
	% of Ont. total		35.5%	
HALTON	Hornby	1	1.0	Herman
	Subtotal	1	1.0	
	% of Ont. total		.0%	
HURON	Grand Bend	6	1959.8	Sunburst
	Tipperary	1	77.9	PPC
	Subtotal	7	2037.7	
	% of Ont. total		1.5%	
KENT	Bothwell-Thamesville	2	18.7	Bryant
		14	993.2	Koyden
		1	59.5	Pope
		17	102.5	Sitler
		6	82.5	Combined
	Chatham	3	1116.7	Francisco
	Clearville	10	1960.5	Murphy
	Dover	1	9.4	Avonry
		N/A	28.0	Comfort
		2	224.7	Francisco
	Dover 7-5-V E	4	8100.7	PPC
	Dresden	1	106.2	Brett
	Morpeth	N/A	42.3	Consumers
	Romney 3-8-II	2	5258.3	Consumers
	Romney 6-13-III	1	1604.0	Consumers
	Tilbury East 1-24-IX	1	140.1	Ram
	Subtotal	66	20109.5	
	% of Ont. total		14.8%	
LAMBTON	Beaver Meadow	1	36.3	Brookwood
	Becher West	18	4375.4	Murphy
	Brigden	2	297.9	Consumers
		1	115.1	Ram
	Brooke	5	538.8	Crich
	Brooke 1-9-X	1	110.6	Bluewater
	Corey East	1	2864.9	Ram
	Corunna	10	1403.5	Esso
	Cromar	1	516.1	Corden
		1	61.9	Ram
	Dawn 28-II	3	2884.2	Brookwood
		1	38.4	Bryant
		2	1043.7	Forbes
		1	262.3	Riddell
	Dawn 4-28-III	1	52.0	Brookwood

TABLE 10: Continued.

County	Pool Name	Active Wells	Production 1987 m^3	Operator 1987
LAMBTON	Dawn Miscellaneous	3	53.8	Colonial
		6	551.3	Forbes
		1	4.8	JMCD
		2	453.8	LMG
		1	148.9	Proto
		1	178.5	Union
	Edys Mills	2	1518.4	Ram
	Enniskillen 2-30-IX	1	31.5	Bluewater
	Enniskillen 7-30-IX	1	79.1	Francisco
	Florence-Oakdale	1	14.2	Brett
	Ladysmith	3	2498.6	Michigan
	Logierait	1	109.4	Brett
	London Road	1	104.3	Devran
	Moore 5-6-III	1	263.4	Dow
	Moore 7-6-III	1	935.2	Crawford
	Moore 2-22-II	1	145.4	Oilfinders
	Oil Springs	6	20.1	Ayrheart
		22	274.3	Baldwin
		54	727.3	Barnes
		5	104.1	Byers
		25	253.9	Donald
		198	2191.3	Fairbank
		30	88.6	Golden
		8	127.2	Kersey
		38	452.0	Matheson
		15	184.3	Mitchell
		27	709.9	Morningstar
		50	413.7	Patterson
		1	114.3	Roskoil
		24	200.4	Woods
	Osborne	1	15.7	Michigan
	Otter Creek East	1	171.4	Cameron
	Petrolia	12	223.4	625138 Ontario
		17	678.0	Ayrheart
		24	844.7	Bear
		14	337.0	Bender
		12	185.1	Brand
		1	85.3	Bradley
		5	380.4	Canflow
		4	212.1	Cartier
		24	1152.9	Edward
		32	830.8	Lambton
		6	98.1	Lyons
		1	156.1	Noble
		4	159.4	Oil Field
		14	410.4	Petrolia
		20	1041.7	Stevenson
		1	28.4	Sylab
		4	119.4	Vye
		15	591.4	Williams
	Petrolia East	5	1313.9	Ram
	Plympton 5-19-VI	3	1471.4	Bluewater
	Seckerton	9	891.9	Esso
	Seckerton North	5	463.7	Esso
	Sombra 7-18-VII	1	91.4	Crawford
		1	72.2	Ram
	Sombra 6-28-IX	1	90.0	Crawford
	Sutorville	1	59.1	Brett
	Wanstead	4	784.5	Roth & Roth
	Warwick	1	545.1	Murphy
	Warwick 6-17-IV SER	1	339.1	Bluewater
	Watford-Kerwood	7	33.3	Chatham
	Subtotal	829	41168.6	
	% of Ont. total		30.4%	

TABLE 10: Continued.

County	Pool Name	Active Wells	Production 1987 m^3	Operator 1987
MIDDLESEX	Ekfrid 8-V S	1	142.3	Den-mar
	Ekfird 10-V S	1	102.2	Den-mar
	Glencoe	1	28.6	Bedford
		13	197.3	Brett
		34	944.1	Glencoe
	Mosa 10-I R.S.	1	96.4	Gaiswinkler
	North Willey	3	451.7	Judo
	Subtotal	54	1962.6	
	% of Ont. total		1.4%	
OXFORD	Gobles	31	565.8	Brett
	Innerkip	1	15.2	Gaiswinkler
		1	13.3	Nith
	Subtotal	33	594.3	
	% of Ont. total		0.4%	
	TOTAL	1176	135635.3	

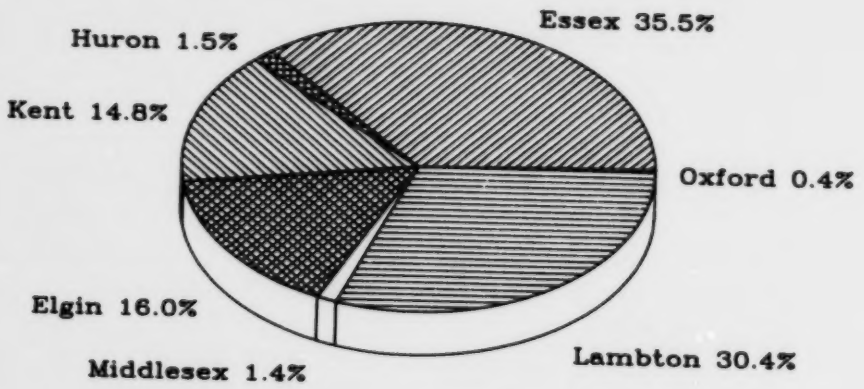

Figure 7. Percentage oil production by county.

TABLE 11: OIL PRODUCTION BY GEOLOGICAL AGE, 1982 - 1987.

COUNTY	POOL NAME	1982	1983	1984	1985	1986	1987
				m^3			
		DEVONIAN					
Elgin	Aldborough 3-8-16-XII	0.0	0.0	1653.0	425.8	113.4	0.0
	Rodney	20788.8	20307.8	19450.1	19217.6	18798.7	17976.1
	Wallacetown	36.4	63.0	55.9	118.8	93.3	126.9
Kent	Bothwell-Thamesville	1413.7	1477.8	1467.8	1410.2	1425.9	1256.4
	Prairie Siding	0.0	0.0	25.8	37.3	0.0	0.0
	Zone 6-5-IV	118.3	43.9	26.1	20.0	0.0	0.0
Lambton	Brooke 2-24-X	0.0	0.0	27.1	6.6	0.0	0.0
	Brooke 5-14-XII	0.0	12.1	4.0	0.0	0.0	0.0
	Florence-Oakdale	0.0	0.0	38.4	21.6	0.0	14.2
	London Road	0.0	0.0	0.0	0.0	0.0	104.3
	Oil Springs	5660.3	6069.7	5953.9	6169.3	5996.8	5861.5
	Petrolia	5445.4	6361.1	6244.6	6619.2	7508.3	7534.5
	Watford-Kerwood	0.0	52.9	0.0	0.0	0.0	33.3
	Wilsoncroft	8.8	31.8	7.7	9.1	0.0	0.0
Middlesex	Glencoe	293.5	356.1	264.7	810.1	1201.3	1170.0
	Subtotal - Devonian	33765.2	34776.2	35219.1	34865.6	35137.7	34077.2
	% of Ontario production	39.4	41.1	39.0	30.9	25.9	25.1
		SALINA-GUELPH (SILURIAN)					
Essex	Comber	0.0	0.0	0.0	10.5	0.0	0.0
	Staples	0.0	0.0	360.4	247.3	66.3	124.0
Huron	Grand Bend	2956.8	2784.6	2459.4	2235.1	1951.0	1959.8
	Tipperary	133.8	128.3	118.8	77.0	47.7	77.9
	Tipperary South	159.1	9.9	0.0	0.0	0.0	0.0
Kent	Chatham	177.8	331.0	236.2	249.7	739.2	1379.0
	Dresden	139.3	145.1	129.9	114.0	115.2	106.2
	Fletcher	10.5	135.1	418.4	44.7	0.0	0.0
	Morpeth	0.0	25.0	27.0	42.7	26.7	42.3
Lambton	Beaver Meadow	36.6	0.0	0.0	0.0	0.0	36.3
	Becher West	5722.7	5340.6	5255.6	5049.8	4527.5	4375.4
	Brigden	224.2	245.0	229.2	194.8	238.0	413.0
	Brooke	1667.5	1593.9	1023.9	817.8	628.7	538.8
	Brooke 1-9-X	351.9	296.9	178.6	133.0	65.1	110.6
	Corey East	3961.7	3358.2	2997.6	2788.0	2924.0	2864.9
	Corunna	2601.7	2050.8	2185.2	1795.1	2416.6	1403.5
	Cromar	522.8	600.4	642.5	475.7	663.7	577.9
	Dawn 156	275.1	224.4	146.9	94.2	80.4	0.0
	Dawn 28-II	280.9	1554.9	4932.9	2756.0	3646.8	3966.3
	Dawn 4-28-III	86.7	272.8	160.4	69.0	48.5	52.0
	Dawn 5-29-IX	354.1	127.8	7.0	0.0	0.0	0.0
	Dawn Miscellaneous	1598.0	1789.9	2101.2	1577.1	1901.6	1391.0
	Edys Mills	1594.5	1406.0	1357.9	1305.6	1204.7	1518.4
	Enniskillen 2-30-IX	26.4	58.3	48.1	41.2	24.5	31.5
	Enniskillen 7-30-IX	0.0	0.0	644.2	509.1	106.1	79.1
	Euphemia 8-18-IV	0.0	0.0	0.0	17.4	0.0	0.0
	Ladysmith	2110.9	2123.1	2266.4	2162.6	2433.7	2498.6
	Logerait	0.0	0.0	0.0	8.8	99.1	109.4
	Moore 5-6-III	0.0	0.0	0.0	0.0	9.9	263.4
	Moore 7-6-III	699.8	562.5	567.6	378.3	879.4	935.2
	Moore 2-22-II	0.0	0.0	0.0	0.0	0.0	145.4
	Oil Springs East	47.0	22.9	14.4	24.5	0.0	0.0
	Osborne	94.1	76.5	47.5	43.8	38.3	15.7
	Otter Creek East	0.	0 12.2	272.3	283.6	239.0	171.4
	Petrolia East	2279.1	1832.9	1915.8	1891.0	1460.9	1313.9
	Plympton 5-19-VI	4329.4	3269.7	2418.6	1881.0	1509.1	1471.4
	Seckerton	2061.2	1211.3	1986.7	1067.0	2124.3	891.9
	Seckerton North	1792.5	1171.2	808.9	767.0	1063.4	463.7
	Shetland	11.1	5.3	15.4	15.2	12.2	0.
	Sombra 18-VII	105.3	108.8	142.5	152.8	163.4	163.7
	Sombra 4-9-XII	5.6	4.3	0.0	0.0	0.0	0.0
	Sombra 6-28-IX	99.0	110.6	108.1	95.4	54.3	90.0
	Sutorville	96.0	98.9	84.2	70.4	73.1	59.1
	Wanstead	691.2	705.8	700.1	573.6	721.5	784.5
	Warwick	767.8	688.4	584.8	552.3	486.4	545.1
	Warwick 6-17-IV SER	311.9	50.8	452.7	318.7	353.8	339.7
Middlesex	Mosa	130.0	129.6	108.2	109.1	112.5	96.4
	Subtotal - Silurian	38514.0	34662.8	38155.5	31039.9	33256.6	31406.3
	% of Ontario production	44.9	41.0	42.2	27.5	24.5	23.2

TABLE 11: Continued.

COUNTY	POOL NAME	1982	1983	1984	1985	1986	1987
				m^3			
		ORDOVICIAN					
Elgin	Aldborough 4-A-VIII	188.0	119.1	77.0	53.4	51.8	6.9
Essex	Colchester	864.4	953.4	887.8	930.4	706.5	895.1
	Gosfield North 5-13-IX	6.7	2.1	0.0	0.0	0.0	0.0
	Gosfield South	1444.3	1223.5	1189.4	937.1	801.6	702.4
	Gosfield South 1-I_III	0.0	0.0	0.0	0.0	0.0	9.1
	Gosfield South 8-7-V	0.0	0.0	0.0	0.0	0.0	15.9
	Hillman	0.0	0.0	395.8	24102.8	43687.8	40769.7
	Maidstone 7-17-V	0.0	0.0	0.0	0.0	0.0	16.0
	Malden	339.4	348.9	349.5	265.7	332.9	265.4
	Malden 3-41-IV	165.6	149.7	106.7	115.0	85.4	90.8
	Mersea 7-15-A	0.0	0.0	0.0	0.0	0.0	12.0
	Mersea 2-15-B	0.0	0.0	342.7	349.0	137.6	4001.0
	Mersea 6-16-B	0.0	0.0	0.0	0.0	357.4	390.3
	Mersea 8-16-VIII	0.0	0.0	0.0	0.0	0.0	0.0
	Mersea 6-23-VII	0.0	0.0	0.0	0.0	701.6	805.1
	Rochester 1-20-V EBR	0.0	0.0	69.8	135.3	56.7	0.0
	Ruscom River	0.0	0.0	0.0	0.0	0.0	0.0
Halton	Hornby	0.0	0.0	0.0	8.0	25.0	1.0
Kent	Dover	54.7	851.2	651.5	330.4	222.4	262.0
	Dover 1-11-V E	0.0	0.0	3.3	6.8	0.0	0.0
	Dover 7-5-V E	0.0	2953.3	5380.3	13214.6	11365.8	8100.7
	Romney 3-8-II	0.0	0.0	0.0	0.0	3170.6	5258.3
	Romney 7-10-II	0.0	0.0	0.0	0.0	0.0	0.0
	Romney 6-13-III	0.0	0.0	0.0	0.0	0.0	1604.0
	Romney 6-13-IV	0.0	0.0	0.0	0.0	0.0	0.0
	Romney 5-15-I	0.0	0.0	0.0	0.0	0.0	0.0
	Tilbury East 1-24-IX	0.0	0.0	0.0	0.0	0.0	140.1
Manitoulin	Manitoulin	0.0	17.7	0.0	0.0	0.0	0.0
	Subtotal - Ordovician	3063.1	6618.9	9453.8	40448.5	61703.1	63346.0
	% of Ontario production	3.	6 7.8	10.5	35.8	45.4	46.7
		CAMBRIAN					
Elgin	Dunwich 16-I	458.3	329.8	333.8	243.6	206.5	222.1
	Dunwich 18-I	62.1	32.9	64.2	33.5	33.4	34.0
	Dunwich 8-22-ABF	0.0	0.0	0.0	0.0	0.0	0.0
	Willey	4706.7	3843.0	3038.6	2755.7	2337.6	3298.8
Kent	Clearville	2890.6	2208.5	2325.2	2175.6	2106.5	1960.5
	St. Patricks	0.0	0.0	0.0	0.0	0.0	0.0
	Zone 5-III	31.0	18.7	7.0	0.0	0.0	0.0
Middlesex	Ekfrid 10-V-S	91.6	138.2	98.3	98.4	105.5	102.2
	Ekfrid 8-V-S	0.0	92.1	135.6	99.8	89.4	142.3
	Willey North	387.1	166.0	26.4	0.0	0.0	451.7
Oxford	Gobles	1562.9	1438.1	1294.5	1067.9	644.4	565.8
	Innerkip	171.1	277.7	181.3	125.1	186.5	28.6
	Innerkip East	7.0	9.5	0.0	0.0	9.1	0.0
	Subtotal - Cambrian	10368.4	8554.5	7504.9	6599.6	5718.9	6805.9
	% of Ontario production	12.1	10.1	8.3	5.8	4.2	5.0
	Total production	85710.7	84612.4	90333.3	112953.6	135816.3	135635.4

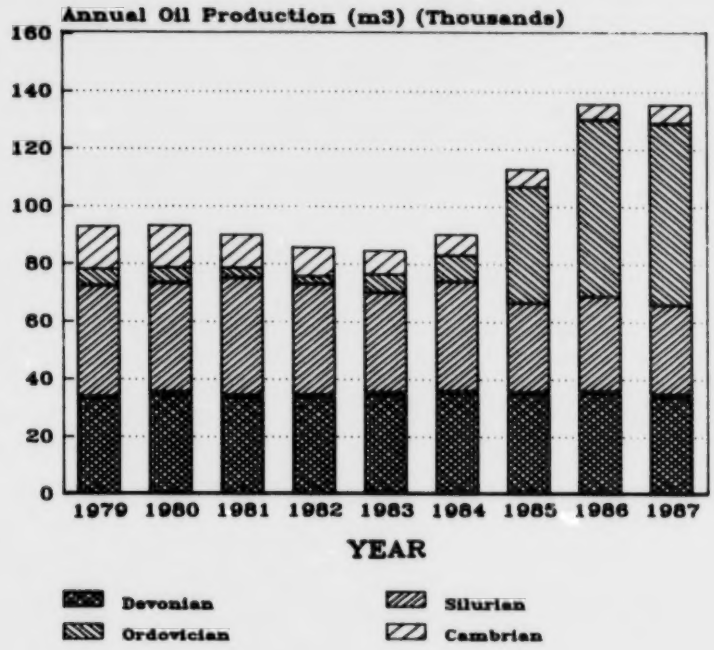

Figure 8. Annual oil production by geological age, 1979–1987.

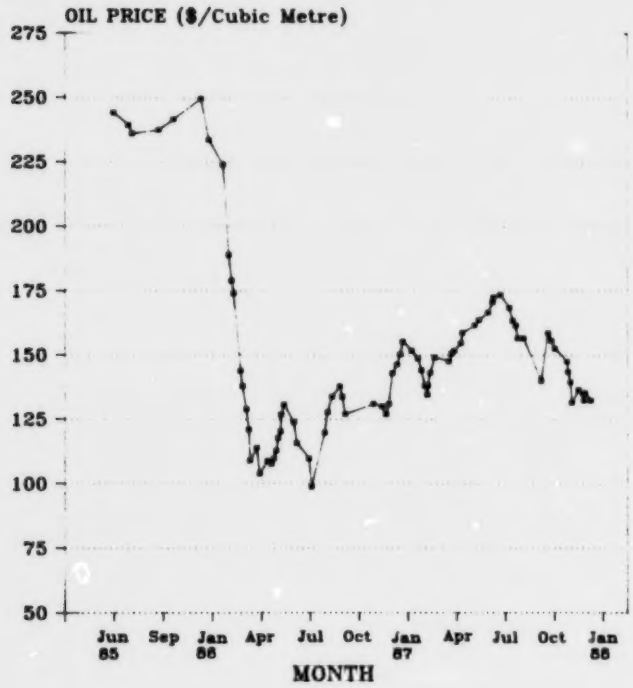

Figure 9. Mersea Township crude oil prices in Ontario, 1985-1987.

TABLE 12: MERSEA TOWNSHIP CRUDE OIL PRICES IN ONTARIO, 1985 –1987

Date	Price $/cubic metre	Date	Price $/cubic metre
01-Jun-85	244.04	16-Dec-86	131.07
01-Jul-85	239.32	23-Dec-86	143.07
09-Jul-85	236.06	01-Jan-87	146.39
01-Sep-85	237.44	08-Jan-87	150.37
01-Oct-85	241.56	13-Jan-87	155.36
26-Nov-85	249.64	31-Jan-87	151.75
12-Dec-85	233.64	13-Feb-87	148.77
10-Jan-86	223.99	20-Feb-87	144.22
22-Jan-86	189.01	27-Feb-87	138.22
28-Jan-86	179.01	04-Mar-87	134.72
01-Feb-86	174.08	05-Mar-87	138.23
15-Feb-86	143.99	10-Mar-87	143.24
19-Feb-86	137.99	19-Mar-87	149.17
27-Feb-86	128.98	17-Apr-87	147.69
04-Mar-86	121.04	23-Apr-87	150.73
06-Mar-86	109.02	28-Apr-87	151.75
20-Mar-86	113.95	12-May-87	154.74
26-Mar-86	103.99	15-May-87	158.76
11-Apr-86	108.94	09-Jun-87	161.77
19-Apr-86	107.83	18-Jun-87	163.77
24-Apr-86	109.83	07-Jul-87	166.72
29-Apr-86	112.84	16-Jul-87	170.70
03-May-86	117.81	18-Jul-87	172.70
08-May-86	120.31	01-Aug-87	173.53
09-May-86	126.81	19-Aug-87	168.56
15-May-86	130.81	26-Aug-87	163.53
04-Jun-86	123.86	01-Sep-87	161.70
10-Jun-86	115.85	05-Sep-87	156.69
05-Jul-86	109.83	17-Sep-87	156.70
10-Jul-86	98.80	23-Oct-87	140.10
06-Aug-86	119.81	06-Nov-87	158.72
12-Aug-86	127.83	13-Nov-87	155.71
21-Aug-86	133.86	20-Nov-87	152.69
06-Sep-86	137.84	15-Dec-87	147.66
11-Sep-86	133.84	17-Dec-87	143.66
17-Sep-86	127.09	22-Dec-87	139.66
14-Nov-86	131.09	25-Dec-87	131.65
02-Dec-86	130.09	08-Jan-88	136.60
10-Dec-86	127.06		

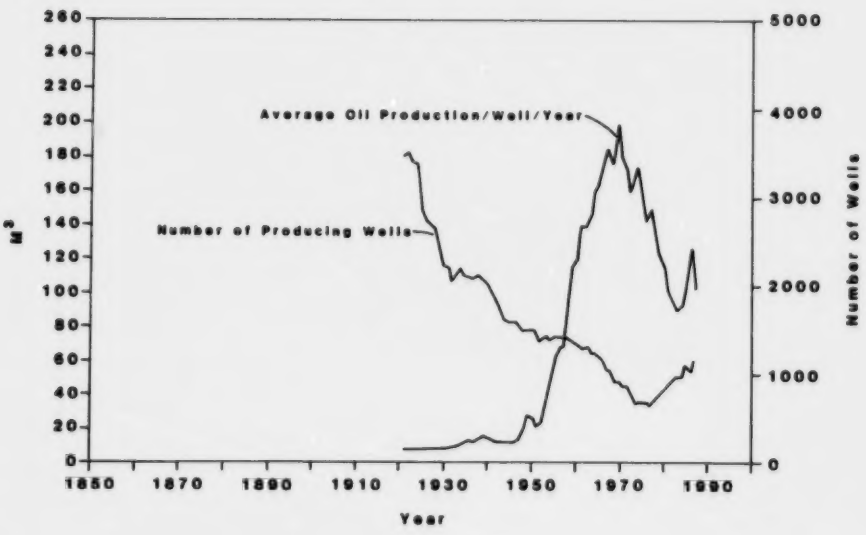

Figure 10. Number of producing oil wells and average oil production/well/year, 1921-1987.

TABLE 13: Historical Oil Production 1863 – 1987.

Year	Number of Producing Oil Wells	Oil Production m^3	Aver. Oil Production /Well/Year	Cumulative Production m^3	Year	Number of Producing Oil Wells	Oil Production m^3	Aver. Oil Production /Well/Year	Cumulative Production m^3
1863		18125		18125					
1864		23530		41655	1926	2752	21777	8	4461555
1865		28936		70590	1927	2708	22195	8	4483750
1866		34341		104931	1928	2641	21330	8	4505080
1867		39747		144678	1929	2443	19257	8	4524338
1868		45152		189831	1930	2222	18650	8	4542987
1869		50558		240388	1931	2208	19454	9	4562442
1870		56774		297163	1932	2056	20723	10	4583164
1871		57911		355073	1933	2151	21631	10	4604796
1872		59047		414120	1934	2201	22478	10	4627274
1873		60183		474303	1935	2109	26239	12	4653514
1874		61319		535623	1936	2079	26311	13	4679825
1875		62456		598078	1937	2082	26265	13	4706090
1876		63592		661670	1938	2110	27448	13	4733538
1877		64728		726398	1939	2065	32812	16	4766350
1878		65865		792263	1940	2028	29833	15	4796183
1879		67001		859264	1941	1956	25348	13	4821531
1880		68137		927401	1942	1852	22870	12	4844401
1881		72673		1000074	1943	1728	21064	12	4865465
1882		77222		1077295	1944	1609	19884	12	4885349
1883		81765		1159060	1945	1579	18017	11	4903367
1884		87216		1246276	1946	1610	19568	12	4922935
1885		93120		1339396	1947	1559	20874	13	4943809
1886		97663		1437059	1948	1489	28139	19	4971948
1887		98572		1535631	1949	1518	41443	27	5013391
1888		115266		1650896	1950	1513	39851	26	5053243
1889		112881		1763777	1951	1471	31348	21	5084590
1890		119240		1883017	1952	1381	30496	22	5115086
1891		123215		2006232	1953	1423	47646	33	5162732
1892		121625		2127857	1954	1396	65578	47	5228311
1893		127190		2255047	1955	1433	83549	58	5311860
1894		131164		2386211	1956	1422	94338	66	5406198
1895		132754		2518965	1957	1428	99155	69	5505353
1896		124010		2642975	1958	1412	123746	88	5629099
1897		119240		2762215	1959	1384	159239	115	5788338
1898		122420		2884635	1960	1339	159787	119	5948125
1899		108906		2993542	1961	1312	182690	139	6130815
1900		107316		3100858	1962	1300	180377	139	6311192
1901		99367		3200225	1963	1311	191639	146	6502831
1902		84263		3284488	1964	1243	198207	159	6701038
1903		75519		3360007	1965	1234	203371	165	6904408
1904		77109		3437115	1966	1183	210464	178	7114873
1905		96187		3533302	1967	1068	197192	185	7312064
1906		93637		3626939	1968	1041	182959	176	7495024
1907		123990		3750929	1969	929	184726	199	7679749
1908		84097		3835027	1970	920	166693	181	7846442
1909		66880		3901906	1971	873	152326	174	7998768
1910		49987		3951893	1972	878	139608	159	8138376
1911		45889		3997782	1973	756	128565	170	8266941
1912		38306		4036088	1974	673	116707	173	8383649
1913		35958		4072045	1975	693	111978	162	8495627
1914		33784		4105829	1976	695	98812	142	8594439
1915		34094		4139923	1977	658	98372	150	8692811
1916		31301		4171224	1978	715	95144	133	8787956
1917		32273		4203497	1979	760	92932	122	8880888
1918		45909		4249406	1980	805	93299	116	8974186
1919		34993		4284399	1981	872	90105	103	9064291
1920		28896		4313295	1982	917	85711	93	9150002
1921	3465	27482	8	4340777	1983	953	84612	89	9234614
1922	3506	26190	7	4366967	1984	961	90333	94	9324947
1923	3407	25342	7	4392310	1985	1102	112954	102	9437901
1924	3379	24534	7	4416844	1986	1069	135816	127	9573717
1925	2884	22934	8	4439778	1987	1175	135635	115	9709353

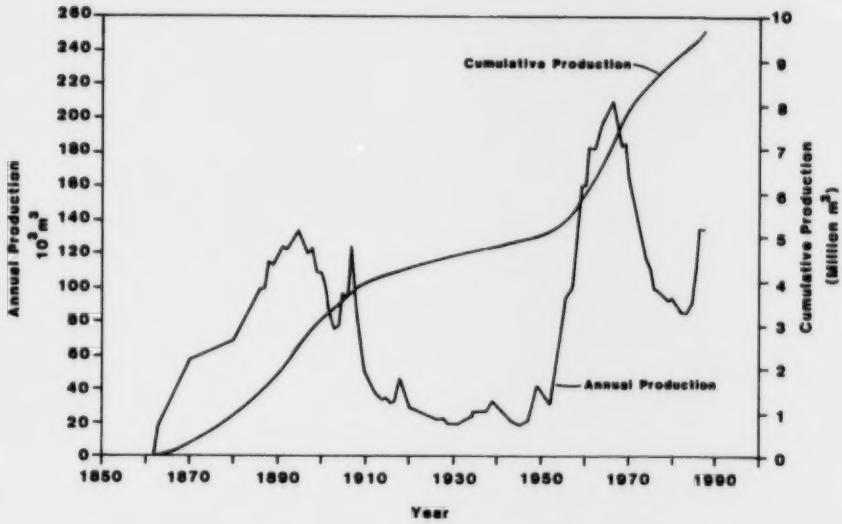

Figure 11. Annual and cumulative oil production, 1863-1987.

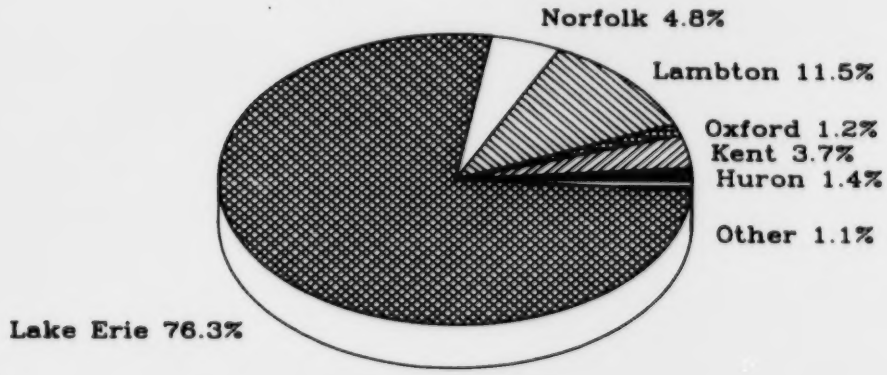

Figure 12. Percentage total gas production by area, 1987.

TABLE 14: GAS PRODUCTION BY POOL OR FIELD, 1987.

County	Pool Name	Active Wells	Production 1987 1000 m^3	Operator 1987
BRANT	Brant	23	358.7	Hyslop
	Subtotal	23	358.7	
	% of Ont. total		0.1%	
ELGIN	Aldborough 4-20-VII	1	654.1	Intrex
	Cowal	2	250.1	Union
	Townline	8	890.3	Union
	Subtotal	11	1794.5	
	% of Ont. total		0.3%	
HALDIMAND	Haldimand	12	7.7	Chatham
		18	86.3	Emerson
		N/A	71.7	Fisherville
		71	837.2	Glenfred
		7	125.1	Lincoln
		40	339.7	Wellandport
	Subtotal	148	1467.7	
	% of Ont. total		0.3%	
HURON	Stanley 4-7-XI	2	5748.3	PPC
	Tipperary	2	641.4	PPC
	Tipperary South	1	728.7	PPC
	Subtotal	5	7118.4	
	% of Ont. total		1.4%	
KENT	Botany	2	970.5	Cameron
	Camden Gore	12	1440.9	Union
	Chatham	10	639.6	Union
		4	609.5	York
	D'Clute	1	284.4	Union
	Dover	4	1526.1	Union
	Dover 7-5-V E	3	4074.2	PPC
	Dover 7-10-VI E	1	34.2	J.W.K.
	Doyles	1	380.8	Cameron
	Morpeth	8	634.5	Pegg
	St. Patricks	1	171.9	Cameron
	Tilbury	30	6291.3	Union
	Wolfe	1	220.4	Raen
	Zone	30	1638.1	Union
	Subtotal	108	18916.4	
	% of Ont. total		3.7%	
LAMBTON	Avonry	1	816.5	Avonry
	Becher West	24	1370.7	Murphy
	Brigden	2	612.7	Consumers
	Charlemont	1	563.8	Cameron
	Corunna	2	133.0	Esso
	Coveny	1	3889.1	Union
	Cromar	1	319.5	Forbes
	Dawn 1	6	1037.3	Union
	Dawn 1-27-VI	2	18597.1	Union
	Dawn 7-28-V	1	2122.8	Union
	Dawn 5-30-IV	2	409.8	Union
	Dawn 2-30-XIV	1	78.2	Cameron
	Dawn Miscellaneous	2	267.6	Colonial
		5	1102.6	Forbes
		6	772.7	Union
	Edys Mills	1	4392.7	Ram
	Edys Mills East	1	66.7	Ram
	Enniskillen 26	1	669.3	Clarke
	Logierait	1	309.2	Brett
	Moore 5-6-III	1	964.9	Dow
	Moore 2-13-VIII	1	1158.2	Talcorp
	Moore 2-22-II	1	1073.1	Oilfinders
	Moore 7-27-VI	1	74.3	Consumers/Ram
	Oil City	N/A	8059.4	Union
	Otter Creek	4	705.2	Cameron
		1	117.1	Ram
	Otter Creek East	3	374.6	Brett
	Sombra 2-23-XII	1	1009.8	Bluewater
		1	5937.7	Brett

TABLE 14: Continued.

County	Pool Name	Active Wells	Production 1987 1000 m^3	Operator 1987
LAMBTON	Sombra 3-26-VI	1	1609.6	Ram
	Subtotal	76	58615.2	
	% of Ont. total		11.5%	
LINCOLN	Lincoln	10	270.8	Consumers
	Subtotal	10	270.8	
	% of Ont. total		--	
NORFOLK	Hemlock	5	744.9	Hemlock
	Norfolk	13	1576.5	Bayview
		27	1768.8	Chatham
		22	936.5	Colonial
		5	439.5	Cons. Explorer
		6	1561.1	Consumers
		42	3227.0	Craven
		7	482.2	Fernlea
		10	853.1	F&M
		3	137.0	Freeman
		3	90.5	Jourika
		70	10437.7	Metalore
		2	125.6	Morrison
		2	62.3	Morrison
	Venison Creek	14	2087.3	Cons. Explorer
	Subtotal	231	24530.0	
	% of Ont. total		4.8%	
OXFORD	Blandford 3-7-VIII	1	684.9	Nith
	Innerkip	1	4330.3	Northquest
		3	1124.9	Nith
	Subtotal	5	6140.1	
	% of Ont. total		1.2%	
WELLAND	Welland	18	736.9	Consumers
		3	93.9	Dark
		3	0.2	Fox
		1	7.0	Ort
		3	49.1	Ruch
		2	24.8	George
	Subtotal	30	911.8	
	% of Ont. total		0.2%	
WELLINGTON	Arthur	3	1204.4	Kenartha
	Subtotal	3	1204.4	
	% of Ont. total		0.2%	
	ONSHORE Subtotal	650	121327.9	
	% of Ont. total		23.7%	
LAKE ERIE PRODUCTION UNITS				
	Clear Creek	71	44942.8	Consumers
	D'Clute	1	112.4	C.W.P.
		9	1495.4	Pembina
	Dover	20	7179.4	C.W.P.
		12	799.0	Mitchell
		19	4290.6	Place
	Leepfrog	8	7863.8	Consumers
	Maitland	6	564.9	Mitchell
		196	123677.2	Pembina
		28	1136.7	Place
	Morpeth	27	100442.8	Consumers
	Selkirk	45	8261.3	Mitchell
		25	6808.3	Place
	Silver Creek	70	69415.2	Consumers
	Tilbury	64	13009.1	C.W.P.
	LAKE ERIE Subtotal	601	389998.9	
	% of Ont. total		76.3%	
	TOTAL	1251	511326.8	

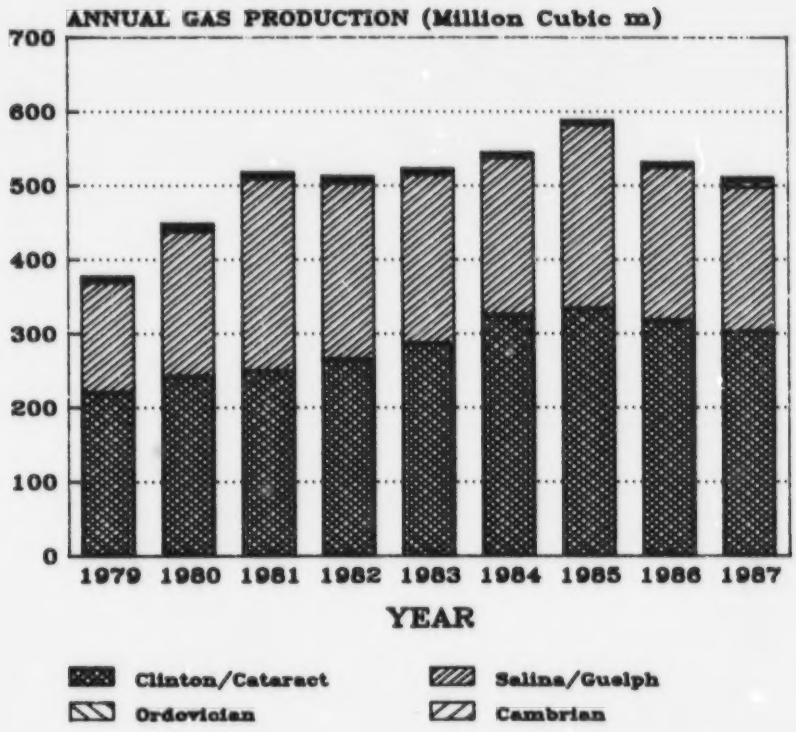

Figure 13. Annual gas production by geological age, 1979–1987.

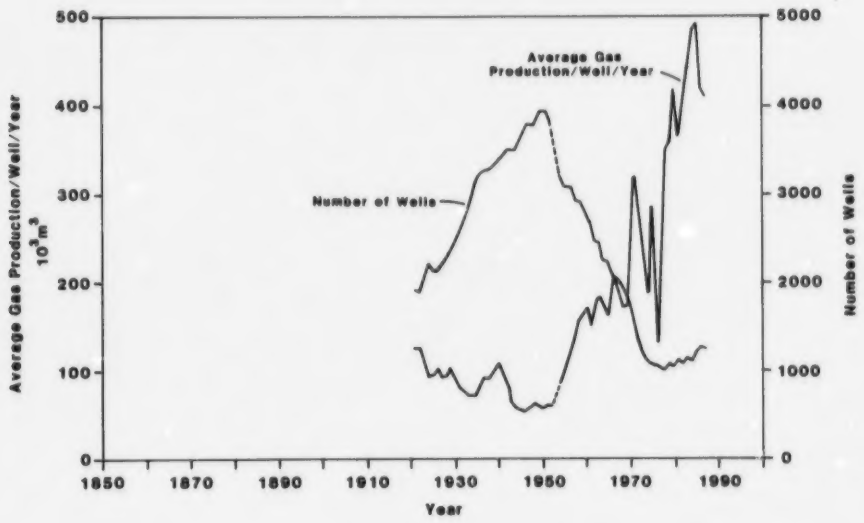

Figure 14. Number of producing gas wells and average gas production/well/year, 1921-1987.

TABLE 15: NATURAL GAS PRODUCTION BY GEOLOGICAL AGE, 1982–1987.

COUNTY	POOL NAMES	1982	1983	1984	1985	1986	1987
				1000 m^3			
		SILURIAN CLINTON/CATARACT					
Brant	Brant	351.6	382.3	407.4	394.3	382.1	358.7
Haldimand	Haldimand	1969.3	1822.9	1660.1	1614.9	1463.2	1467.7
Lincoln	Lincoln	219.8	228.2	276.6	249.2	256.7	270.8
Norfolk	Hemlock	1133.4	737.1	724.5	925.0	870.9	744.9
	Norfolk	20387.2	19305.4	19547.2	19886.1	21102.2	21697.8
	Venison Creek	4604.4	4181.1	3567.8	2800.6	2357.5	2087.3
	Wilsonville	0.0	0.0	0.0	0.0	0.0	0.0
	Wilsonville South	0.0	0.0	0.0	0.0	0.0	0.0
Oxford	Norwich South	0.0	0.0	0.0	0.0	0.0	0.0
Welland	Welland	681.9	719.0	783.0	950.4	951.2	916.2
	Sherkston	0.0	0.0	0.0	0.0	0.0	0.0
Lake Erie	Clear Creek	43357.0	53613.8	48429.5	53904.9	53180.6	44942.8
	Colborne	0.0	0.0	0.0	0.0	0.0	0.0
	Dover	14233.0	17207.0	16243.0	13930.5	11368.4	12269.0
	Leepfrog	6348.4	7417.0	4345.5	3888.4	3208.2	7863.8
	Maitland	115654.0	115526.2	140992.1	150374.8	139479.9	125378.8
	Selkirk	12937.0	12036.8	13049.0	15931.1	16874.6	15069.6
	Silver Creek	42709.9	53618.9	74863.7	68463.2	65965.4	69415.2
	Subtotal – Clin/Cataract	264586.9	286795.7	324889.4	333313.4	317460.9	302482.5
	% of Ontario production	51.6	54.8	59.6	56.6	59.6	59.2
		SILURIAN SALINA/GUELPH					
Elgin	Aldborough 4–20–VI	351.2	18.3	2.3	130.7	882.9	654.1
	Cowal	363.8	315.0	291.9	280.4	278.7	250.1
	Townline	2246.4	2021.7	1162.7	659.6	165.1	890.3
Huron	Ashfield 7–1–III ED	0.0	0.0	0.0	0.0	0.0	0.0
	Bayfield	0.0	1705.9	1525.9	587.0	43.1	0.0
	Stanley 4–7–XI	0.0	0.0	0.0	2738.5	7224.8	5748.3
	Tipperary	1451.8	1013.1	1003.1	843.6	1042.5	641.4
	Tipperary South	2389.1	1191.6	936.5	910.8	696.1	728.7
Kent	Botany	1029.1	631.4	1023.2	875.6	880.6	970.5
	Camden 1–11–XIV Gore	0.0	0.0	0.0	1083.2	238.0	0.0
	Camden 6–10–IX Gore	0.0	0.0	0.0	0.0	0.0	0.0
	Camden Gore	1369.3	1449.4	1447.1	1487.8	1433.2	1440.9
	Chatham	1163.9	1265.5	1028.7	1328.1	1286.1	1249.1
	D'Clute	223.4	209.6	265.2	213.6	246.4	284.4
	Doyles	0.0	0.0	0.0	0.0	20.8	380.8
	Morpeth	701.8	756.2	722.3	695.2	651.6	634.5
	Tilbury	6817.9	6971.6	6044.2	5766.7	5910.1	6291.3
	Wolfe	112.5	169.8	146.4	129.8	193.2	220.4
	Zone	1971.1	1943.1	1752.2	1588.2	1881.4	1638.1
Lambton	Avonry	0.0	0.0	0.0	0.0	832.9	816.5
	Becher East	0.0	14.6	0.0	0.0	0.0	0.0
	Becher West	958.6	1066.2	1689.4	1357.1	1513.1	1370.7
	Brigden	1051.4	915.2	876.2	770.5	728.9	612.7
	Charlemont	135.9	97.2	134.9	136.6	290.6	563.8
	Corunna	141.6	176.2	183.4	142.0	207.0	133.0
	Coveny	3911.6	2505.7	902.1	2226.1	2478.9	3889.1
	Cromar	484.6	262.5	839.7	531.5	0.0	319.5
	Dawn 1	735.0	583.7	971.3	427.5	1258.1	1037.3
	Dawn 1–27–VI	0.0	0.0	0.0	15562.4	19353.3	18597.1
	Dawn 7–28–V	2685.8	3266.1	2444.3	1360.3	2334.9	2122.8
	Dawn 5–29–IX	1297.0	525.3	0.0	0.0	0.0	0.0
	Dawn 2–30–XIV	0.0	0.0	0.0	0.0	0.0	78.2
	Dawn 5–30–IV	155.5	353.4	339.2	446.1	301.6	409.8
	Dawn Miscellaneous	2442.5	2602.8	2116.0	939.6	2108.1	2142.9
	Edys Mills	1756.3	2835.0	3838.9	3553.1	3830.3	4392.7
	Edys Mills East	172.9	277.3	139.0	99.6	48.3	66.7
	Enniskillen 26	0.1	0.0	0.0	0.0	544.9	669.3
	Enniskillen 6–15–II	0.0	0.0	0.0	0.0	0.0	0.0
	Logierait	0.0	0.0	0.0	0.0	345.0	309.2
	Moore 5–6–III	0.0	0.0	0.0	0.0	785.1	964.9
	Moore 2–13–VIII	0.0	0.0	0.0	0.0	0.0	1158.2
	Moore 3–21–XII	79671.2	61378.0	60946.0	5646.0	0.0	0.0
	Moore 2–22–II	0.0	0.0	0.0	0.0	2106.9	1073.1
	Moore 7–27–VI	0.0	0.0	106.1	1132.5	771.3	74.3

TABLE 15: Continued.

COUNTY	POOL NAMES	1000 m^3 1982	1983	1984	1985	1986	1987
Lambton	Moore 5-28-VIII	0.0	0.0	0.0	0.0	0.0	0.0
	Oil City	0.0	2587.2	6397.8	5834.0	4876.3	8059.4
	Oil Springs East	6218.0	5794.8	4310.2	2829.6	2088.0	0.0
	Otter Creek	433.8	1090.1	966.4	845.0	657.1	822.3
	Otter Creek East	441.3	605.1	484.6	473.4	433.3	374.6
	Sarnia 1-8-A	0.0	308.7	0.0	60173.0	26947.0	0.0
	Sarnia 5-3-II	0.0	0.0	0.0	0.0	0.0	0.0
	Sarnia 2-11-VIII	0.0	0.0	0.0	0.0	0.0	0.0
	Sombra 5-11-XII	0.0	0.0	0.0	0.0	0.0	0.0
	Sombra 4-9-XII	1237.7	904.7	712.2	26.0	0.0	0.0
	Sombra 4-16-IX	0.0	0.0	0.0	0.0	0.0	0.0
	Sombra 2-23-XII	0.0	0.0	0.0	0.0	0.0	6947.5
Oxford	Brownsville	0.0	0.0	0.0	0.0	0.0	0.0
Lake Erie	Atlas	0.0	0.0	0.0	0.0	0.0	0.0
	D'Clute	2655.9	877.3	2122.9	2197.9	1743.2	1607.8
	Erieau	0.0	0.0	0.0	0.0	0.0	0.0
	Morpeth	94815.8	103197.8	85839.1	105008.1	92022.4	100442.8
	Tilbury	15977.1	15518.2	17902.2	17085.9	14188.4	13009.1
	Subtotal - Salina/Guelph	237570.9	227405.3	211613.6	248122.6	205869.5	194088.1
	% of Ontario production	46.3	43.5	38.8	42.1	38.7	38.0
	ORDOVICIAN						
Elgin	Aldborough 7-18-IV	0.0	0.0	0.0	0.0	0.0	0.0
Kent	Dover	1494.9	1209.4	1112.2	1277.8	1388.1	1526.1
	Dover 7-5-V E	0.0	0.0	0.0	0.0	227.8	4074.2
	Dover 7-10-VI E	47.3	112.4	103.4	107.1	51.5	34.2
Lambton	Sombra 3-26-VI	0.0	0.0	0.0	0.0	214.3	1609.6
Wellington	Arthur	1267.9	1235.6	1181.5	1216.5	1235.8	1204.4
	Subtotal - Ordovician	2810.1	2557.4	2397.1	2601.4	3117.5	8448.5
	% of Ontario production	0.5	0.5	0.4	0.4	0.6	1.7
	CAMBRIAN						
Kent	St. Patricks	0.0	0.0	0.0	0.0	0.0	171.9
Oxford	Blandford 3-7-VIII	0.0	0.0	0.0	0.0	0.0	685.0
	Innerkip	7117.2	5809.3	5708.9	4418.7	4961.2	5455.2
	Innerkip East	577.4	391.9	400.4	289.8	318.1	0.0
	Subtotal - Cambrian	7694.6	6201.2	6109.3	4708.5	5279.3	6312.0
	% of Ontario production	1.5	1.2	1.1	0.8	1.0	1.2
	Total production	512662.5	522959.6	545009.4	588745.9	531727.2	511331.1

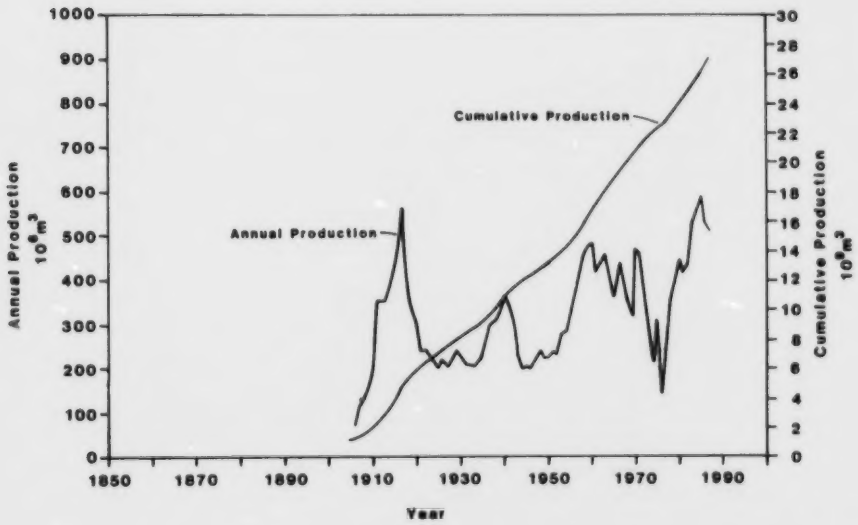

Figure 15. Annual and cumulative gas production, 1906-1987.

TABLE 16: LAKE ERIE GAS PRODUCTION 1960 TO 1987.

Year	Number of Active Wells	Number of Suspended Wells	Production (1000 m^3)	Average Production/ Well (1000 m^3)	Cumulative Production (1000 m^3)
1960	127	17	102021.4	803.3	1083614.1
1961	145	41	92750.8	639.7	1176364.8
1962	172	49	87687.6	509.8	1264052.5
1963	168	74	100090.7	595.8	1364143.1
1964	196	63	97954.7	499.8	1462097.8
1965	225	57	105758.6	470.0	1567856.4
1966	228	60	125980.1	552.5	1693836.5
1967	200	86	117186.6	585.9	1811023.1
1968	222	81	103471.6	466.1	1914494.7
1969	223	107	117103.9	525.1	2031598.7
1970	250	90	144800.2	579.2	2176398.8
1971	268	47	143558.8	535.7	2319957.6
1972	272	59	175858.4	646.5	2495816.0
1973	285	49	181161.6	635.7	2676977.6
1974	291	73	151038.1	519.0	2828015.7
1975	272	107	160309.0	589.4	2988324.7
1976	279	114	80587.0	288.8	3068911.7
1977	320	141	157891.5	493.4	3226803.2
1978	328	100	212634.5	648.3	3439437.7
1979	344	119	213870.3	621.7	3653308.0
1980	376	NA	272426.3	724.5	3925734.3
1981	474	NA	324283.3	684.1	4250017.6
1982	444	NA	353013.6	795.1	4603031.2
1983	527	161	383651.0	728.0	4986682.2
1984	585	148	407790.0	697.1	5394472.2
1985	610	153	430784.8	706.2	5825257.0
1986	622	123	398031.1	639.9	6223288.1
1987	601	NA	389998.9	648.9	6613287.0

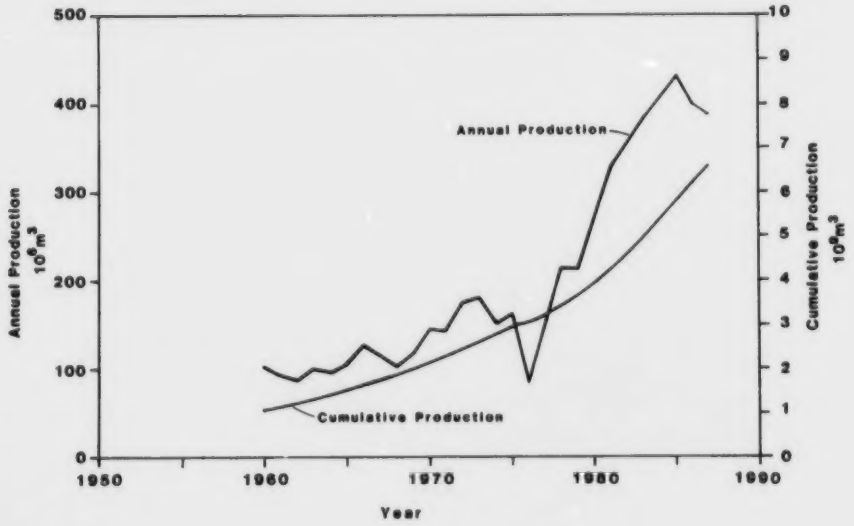

Figure 16. Annual and cumulative gas production from Lake Erie, 1960-1987.

TABLE 17: HISTORICAL GAS PRODUCTION, 1905–1987

Year	Number of Producing Gas Wells	Gas Production 1000 m^3	Aver. Gas Production /Well/Year	Cumulative Production 1000 m^3	Year	Number of Producing Gas Wells	Gas Production 1000 m^3	Aver. Gas Production /Well/Year	Cumulative Production 1000 m^3
1905				1258145					
1906		71788		1329933	1947	3793	220558	58	12496475
1907		117728		1447661	1948	3785	243348	64	12739824
1908		126994		1574655	1949	3812	227309	60	12967132
1909		152630		1727285	1950	3938	226891	58	13194024
1910		205754		1933039	1951	3951	239167	61	13433191
1911		348770		2281808	1952	3846	235183	61	13668374
1912		352820		2634629	1953	NA	278618	NA	13946992
1913		355752		2990381	1954	3211	283726	88	14230718
1914		398369		3388750	1955	3103	307438	99	14538156
1915		430932		3819681	1956	3083	362925	118	14901082
1916		507893		4327574	1957	3057	407947	133	15309029
1917		567305		4894879	1958	2931	457438	156	15766466
1918		370171		5265050	1959	2900	477019	164	16243485
1919		327563		5592613	1960	2792	481207	172	16724692
1920		303938		5896551	1961	2728	412005	151	17136697
1921	1915	241700	126	6138251	1962	2472	443282	179	17579979
1922	1907	242721	127	6380972	1963	2449	450981	184	18030960
1923	2004	230260	115	6611233	1964	2262	391377	173	18422336
1924	2210	208802	94	6820035	1965	2208	359749	163	18782085
1925	2125	205583	97	7025618	1966	2098	440134	210	19222219
1926	2126	220291	104	7245909	1967	2043	402769	197	19624989
1927	2217	207111	93	7453020	1968	1986	341799	172	19966788
1928	2272	216219	95	7669239	1969	1834	318345	174	20285133
1929	2349	243143	104	7912382	1970	1672	471643	282	20756776
1930	2452	225020	92	8137402	1971	1439	457997	318	21214773
1931	2606	210179	81	8347581	1972	1292	350561	271	21565333
1932	2707	209234	77	8556815	1973	1187	269911	227	21835244
1933	2821	203016	72	8759831	1974	1130	213506	189	22048750
1934	2977	217639	73	8977470	1975	1083	309778	286	22358528
1935	3127	231122	74	9208592	1976	1070	140439	131	22498966
1936	3218	283469	88	9492061	1977	1034	241522	234	22740489
1937	3252	304420	94	9796482	1978	1017	352997	347	23093485
1938	3273	310269	95	10106751	1979	1078	377576	350	23471061
1939	3322	338987	102	10445738	1980	1066	448904	421	23919965
1940	3382	369775	109	10815513	1981	1141	517701	454	24437666
1941	3429	335082	98	11150595	1982	1086	512663	472	24950328
1942	3503	296784	85	11447379	1983	1169	522960	447	25473288
1943	3511	224198	64	11671577	1984	1128	545009	483	26018297
1944	3500	200632	57	11872209	1985	1196	588746	492	26607043
1945	3612	203960	56	12076169	1986	1266	531727	420	27138770
1946	3696	199748	54	12275917	1987	1251	511327	409	27650097

4. SOURCES OF PRODUCTION AND RESERVOIR DATA IN ONTARIO

The production tables included in this report were compiled utilizing a variety of sources including previous Annual Reports, Oil and Gas Papers, and Open File Reports prepared by Bailey and Cochrane (1984a, b, 1985, 1986, 1990). Bailey and Cochrane (1986) provides a detailed description of the various sources of data available and the problems one encounters when attempting to assemble a production history for any particular pool. The entire section is reprinted here as it is a valuable aid to anyone utilizing production data available in files of the Petroleum Resources Section, Ministry of Natural Resources.

"As a condition for the receipt or renewal of a licence to produce oil and gas in Ontario, the Ontario Ministry of Natural Resources (OMNR) requires the operator to submit annually a tabulation of the oil and gas produced by well and by field for the previous year; OMNR Form 109 is used for gas and Form 108 for oil production. The OMNR also receives annual records of gas purchases by the utilities, primarily, Union Gas Ltd. and Consumers' Gas Co.; and records of oil purchases from the refiners, primarily, Imperial Oil Ltd.

This information is the basis for the production figures published annually by the OMNR in the "Oil and Gas Exploration, Drilling and Production Summary". The annual summary lists the annual production by field, the shut-in pressure for gas wells, the well status, and the annual production for four previous years. The data is generally of good quality and can be used for the construction of pool decline curves.

If more detailed data is required, the Forms 108 and 109 can be reviewed at the OMNR Regional Office on 659 Exeter Road, London, Ontario. Production data can also be found in pool studies submitted by operators to

support applications for waterflooding or unitization. In addition, some pool studies and production records have been published in various geological journals.

Details on the initial completion of a well are submitted by the operators on OMNR Form 107, but records of recompletions and workovers are not usually found in the Ministry files. Reservoir data is usually found in pool studies submitted by operators for unitization and waterflooding operations. The OMNR has a good record of crude oil analyses, gas analyses, core analyses, drill stem test data and electrical logs. Unless the field is undergoing secondary recovery, the OMNR has no record of the quantity of water produced in association with the hydrocarbons. When a field is being waterflooded, the operator makes an annual report of the amount of water used during the year and the injection pressure. All data submitted by operators is held in the confidential files for one year.

The format of the reports completed by the operators for submission to the Ministry has changed over the years. The OMNR has records of operator's submissions for gas wells back to the year 1943 and has records for oil wells back to 1954. Although there is some gas production data submitted by operators for previous years, the first year of continuous reporting in the OMNR files is 1943. From 1943 to 1953, the form used by the operators was called "Report of Mineral Production for the use of the Ontario Department of Mines, Toronto and the Dominion Bureau of Statistics, Ottawa". Unfortunately, on this form, the gas producer did not describe the actual location of the wells in any more detail than by county and township.

In the period 1954 to 1959, the form became "Form 15, Ontario Fuel Board Act, 1954, Annual Report by Person Producing, Storing, Transmitting or Distributing Natural Gas". The form evolved into "Ontario Department of Energy Resources Form 503" in the period 1960 to 1963, and the "Energy Act 1964 Form 401" from, 1964 to 1966. In 1967 the form was revised once again and, in 1968, it became the Form 109 which is still in use at this time.

For oil production, the first year of continuous reporting is 1954, and from that year to 1959, the form was called "Form 14 Ontario Fuel Board Act". It became "Form 502 Ontario Department of Energy Resources" from 1960 to 1963 and then "Form 108 Energy Act 1964" from 1964 to 1966. Form 108 was revised in 1967 and is presently in use at this time, although conversion to metric units became effective in 1979.

Some comments on the data quality are warranted. Production data derived from various sources always contains discrepancies. In the case of oil production, some operators provide pool production data while others provide sales data or a mixture of both. The oil purchaser reports the quantity of oil received at his terminal but actually pays for that quantity of oil reduced by a factor to account for the basic sediments and water content. Other than an annoyance factor, the differences in production data arising from these cause some problems in reserve estimates for marginal wells, especially if large quantities of water are being produced.

In the case of gas production data, discrepancies occur mainly because of the different pressure bases used in the gas purchase contracts. Also, if the operator and the purchaser meter the gas separately, there is invariably a difference in the measurements. In cases where one operator produces gas from a number of wells, either in the same pool or from separate pools, the gas production is occasionally commingled and it is difficult to determine the quantity of gas produced by each well or pool. Pressure data for gas wells is usually measured at the wellhead and must be used cautiously whenever fluid could be contained in the well bore.

Typing errors, misprints and misinterpretations of the type of data requested are common in Forms 108 and 109; it is obvious that some of the forms were completed by persons not familiar with oil and gas production.

If a pool has not been unitized or was unitized after a period of production, it becomes a challenge to assemble all of the production data submitted by the various operators, correlate it and combine it into the field cumulative. The problem is compounded when one operator sells all or part of his interest to another party. Willey Pool, Elgin County, was such a case. The published production data was broken down into its components and then reassembled to result in the appearance of production data for four smaller pools, separated from the main Willey Pool.

The oil industry originated in southwestern Ontario, and as a result, the production information for the older fields is not always available or reliable. Some of this production data is published in technical papers but the best data source for the older fields is the OMNR Annual Natural Gas and Petroleum Reports. Most of the data in these reports must be accepted at face value because of the absence of supporting documents. When two sources of published information conflict, judgement must be used in selecting the appropriate data to be used for reserve calculations".

VII. Natural Gas Storage

Fifteen of the eighteen designated gas storage pools were in operation in 1987. Total gas storage working capacity when delta pressured in 1987 was approximately 4527.2 million cubic metres. The "working capacity" of the storage pools is the reservoir volume available for injection and withdrawal of gas from the reservoir between the maximum delta pressure and the cushion pressure. In most cases the cushion pressure of storage reservoirs in Ontario is approximately 2413 kPa (reservoir pressure). Lambton County remained the centre for gas storage operations, with all but one of the active pools contained within its boundaries.

Gas storage statistics have been updated as of October 1, 1988 and are presented in Table 18. Storage capacities in the Payne, Bickford, and Terminus pools have increased since 1985 due to increased delta pressuring of these pools. The Moore 3-21-XII pool was designated for natural gas storage by the Ontario Energy Board in 1988, bringing the total number of designated storage pools to nineteen. Total gas storage working capacity as of October 31, 1988 was 5090.8 million m^3.

TABLE 18. NATURAL GAS STORAGE

Reservoir	Formation[1]	Status	Operator	Total Gas -In-Place When Delta Pressured 10^6m^3	Working Capacity When Delta Pressured 10^6m^3	Reservoir Pressure When Delta Pressured kPag	Original Reservoir Pressure kPag
Bentpath	G, A-1	Active	Union	183.0	125.9	6916	5981
Bickford	G, A-1	Active	Union	727.1	539.8	7612	6398
Corunna	G, A-1	Active	Tecumseh	NA	138.8	7964	6502
Crowland	Whirlpool	Active	Consumers'	NA	14.2	4330	3447
Dawn 156	G, A-1	Active	Union	870.5	591.5	6757	6047
Dawn 167	G, A-1	Active	Union	200.9	101.2	6592	6247
Dawn 47-49	G, A-1	Active	Union	163.0	110.7	6757	5964
Dawn 59-85	G, A-1	Active	Union	260.5	138.5	6757	5964
Moore 3-21-XII	G, A-1	Active	Tecumseh,Union	676.8	563.6	7585	6412
Enniskillen 28	G	Inactive	Union	115.6	NA	7819	5288
Kimball-Colin.	G, A-1	Active	Tecumseh	NA	1019.8	7964	6336
Payne	G, A-1	Active	Union	833.7	635.6	8219	6047
Rosedale	G, A-1	Active	Union	109.6	75.6	6957	6460
Seckerton	G, A-1	Active	Tecumseh	NA	320.1	7964	6481
Sombra	G, A-1	Inactive	Union	71.2	NA	7612	6467
Terminus	G, A-1	Active	Union	400.1	277.5	6757	6109
Waubuno	G, A-1	Active	Union	328.9	245.4	6757	6419
Wilkesport	G, A-1	Active	Tecumseh	NA	192.6	7929	6378
Zone	A-1, A-2	Inactive	Union	146.1	NA	7129	4971

Total Active Working Capacity = 5090.8 million m^3

1. G = Guelph, A-1 = A-1 Carbonate, A-2 = A-2 Carbonate
Statistics are accurate as of October 1, 1988.

VIII. Salt Cavern Storage

Table 19 provides a summary of salt cavern storage operations in southwestern Ontario. Statistics were compiled from a survey of the companies involved by the Petroleum Resources Section, and are up-to-date as of October 31, 1988.

TABLE 19. SALT CAVERN STORAGE

Company Name	Cavern Number	Capacity (m^3)	Contents
Amoco Canada (Sarnia)	RP-1	19,237	NGL mix
	RP-2	20,350	NGL mix
	RP-3	28,618	NGL mix
	RP-4	58,825	NGL mix
	RP-5	32,751	NGL mix
	RP-6	50,240	NGL mix
	RP-7	63,595	NGL mix
	P-1	62,800	Spec LPG
	P-2	61,200	Spec LPG
	P-3	73,930	Spec LPG
	P-4	55,170	Spec LPG
	P-5	66,770	Spec LPG
	P-6	64,230	Spec LPG
	P-7	45,310	Spec LPG
	P-8	45,310	Spec LPG
	B-1	110,650	Spec LPG
	B-2	24,960	Spec LPG
	B-3	72,970	Spec LPG
	B-4	57,710	Spec LPG
Total	19	1,023,626	
Amoco Canada (Windsor)	E-1	61,210	Ethane
	E-3	50,560	Propane
	E-5	41,340	Ethane/Ethylene
	I-4	12,720	Butane
	32/33	397,500	NGL
	34	12,100	Empty
	35	81,000	Propane
	B-7	47,700	Butane
	P-8	54,850	Butane
Total	8 active	746,880	
	1 inactive	12,100	
Dow Chemical Canada	HC-1	42,340	Ethylene
	HC-2	9,197	Oil
	HC-3	58,673	Ethylene
	HC-4	44,243	Ethylene
	HC-5	36,155	Ethylene
	HC-6	31,239	Ethylene
	HC-7	126,987	Brine
	HC-8	19,188	Propylene
	HC-9	39,386	Brine
	HC-10	52,262	Brine
	HC-11	21,409	Brine
	HC-12	17,746	Brine
	41-42	557,587	Inactive
	43-44	472,340	Inactive
	45-46	313,173	Brine
	47-48	712,789	Inactive
	49-50	171,354	Ethylene
	51-52	79,718	Ethylene
	53-54	616,661	Observation
	55	57,073	Observation
	56	74,062	Butane
	57-58	331,059	Brine
	59-60	254,387	Propane
	61	91,940	Brine
	62	122,907	Brine
	63-64	4,072	Brine
	65-66	119,732	Brine
	67-68	81,173	Brine
	69	61,236	Brine
	70	47,266	Brine
	71-72	34,535	Brine
	73	7,930	Brine
	75	47,249	Brine
	76	23,919	Brine
Dow Chemical Canada	77	7,870	Brine
	78	8,079	Brine
	79	7,745	Brine
	81	24,608	Brine
	82	23,732	Brine
	83	19,724	Brine
	84	19,354	Brine
	85	17,332	Brine
Total	11 active	820,556	
	26 brine	1,672,425	
	3 inactive	1,811,558	
	2 observ	673,734	
Imperial Oil Ltd. -Esso Petroleum -Esso Chemical	C-982	39,747	Ethane/Propane
	C-981	28,618	Empty
	C-985	20,668	LPG
	C-4040	33,387	Iso-Butane
	C-4043	41,337	n-Butane
	C-4044	34,997	Propane
	C-983	31,797	Fuel Gas
	C-4041	21,463	Propylene
	C-4042	38,316	Ethylene
Total	8 active	261,692	
	1 inactive	28,618	
Petrosar	1	39,680	Ethylene
	2	61,626	Ethylene
	3	15,700	Fuel Gas
	4	42,900	Propylene
	5	17,900	Propane
	6	23,848	Empty
Total	5 active	177,806	
	1 inactive	23,848	
Polysar Ltd.	1	31,000	Butylene
	2	17,000	Butylene
	3	18,000	Butylene
	4	16,700	Butylene
	5	21,400	Isobutylene
	7	12,600	Butylene
Total	6	116,700	
Shell Canada Ltd.	W-1	33,400	Butane
	W-2	23,200	Butane
	W-3	15,400	Propylene
	W-4	5,500	Propylene
Total	4	67,500	
Sun Oil Ltd.	3	22,894	Pentanes/ Hexanes
	4	19,873	Propane
	5	34,570	Butane
	7	11,420	Butane/Butylene
	8	16,376	Inactive
	9	36,090	LPG Mixture
	10	16,853	LPG Mixture
	13	14,547	LPG Mixture
	14	16,025	Iso-butane
Total	8 active	172,272	
	1 inactive	16,376	
TOTAL	69 active	3,387,032	
	26 brine	1,672,425	
	9 inactive	1,823,658	
	2 observ	673,734	

Data current as of October 31, 1988.

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Appendix I.
Licences Issued in 1987

TABLE I–1. PERSONS LICENCED TO LEASE OIL OR GAS RIGHTS, 1987.

Licencee	City/Province	Licence #
398311 Ontario Limited	Corunna, Ontario	00001L87
672564 Ontario Limited	Toronto, Ontario	00963L87
A.I.S. Resources Limited	Montreal, Quebec	00008L87
Adanac Oil & Gas Limited	Calgary, Alberta	00010L87
Avonry Gas Company Limited	Petrolia, Ontario	00026L87
B.G. Environmental Surveys Limited	Rexdale, Ontario	00033L87
B.P. Resources Canada Limited	Calgary, Alberta	00034L87
Barnes, Joyce	Wyoming, Ontario	00044L87
Barnes, Kenneth	Wyoming, Ontario	00045L87
Bayview Explorations Ltd.	St. Williams, Ontario	00049L87
Beach, Percy J.	St. Catharines, Ontario	00051L87
Bear Creek Resources Limited	Toronto, Ontario	00052L87
Beech Lane Explorations	St. Williams, Ontario	00059L87
Blackwell Petroleum Services Ltd.	London, Ontario	00069L87
Bluewater Oil & Gas Limited	Calgary, Alberta	00074L87
Bogaert, Michael P.	Brigden, Ontario	00078L87
Bonhomme, J.C.	Toronto, Ontario	00079L87
Bonus Petroleum corp.	Calgary, Alberta	00080L87
Bowes, Paul	London, Ontario	00087L87
Boyce, Paul F.	London, Ontario	00088L87
Boychuk, Leonard J.	London, Ontario	00089L87
Burgess, D. Bryan	Chatham, Ontario	00097L87
Burt, Ross	Orangeville, Ontario	00098L87
C.D. Fraser Land Services Limited	Lambeth, Ontario	00103L87
Cairnlins Petroleum Services	Komoka, Ontario	00107L87
Cameron Petroleums Limited	Lambeth, Ontario	00113L87
Campbell, Keith	Merlin, Ontario	00115L87
Campbell, Paul	London, Ontario	00982L87
Canadian Occidental Petroleum Ltd.	Calgary, Alberta	00120L87
Canex Petroleum Incorporated	Rexdale, Ontario	00750L87
Carnegie, Donald	Inwood, Ontario	00789L87
Central Explorers Inc.	Calgary, Alberta	00018L87
Chatham Resources Ltd.	Hamilton, Ontario	00139L87
Chemical Projects Limited	Rexdale, Ontario	00142L87
Chivers, John S.	London, Ontario	00143L87
Coldicott, W.J.	Scarborough, Ontario	00150L87
Colonial Petroleums Limited	London, Ontario	00151L87
Consolidated West Petroleum Limited	Port Colborne, Ontario	00156L87
Craven Oil Company Limited, Inc.	Lubbock, Texas	00162L87
Dekker, Clarence	Chatham, Ontario	00181L87
Devran Petroleum Ltd.	London, Ontario	00186L87
Dome Petdroleum Limited	Calgary, Alberta	00196L87
Dow Chemical Canada Inc.	Sarnia, Ontario	00209L87
Dunlop, Roberta L.	Chatham, Ontario	00990L87
E.P. Rowe Oil Limited	London, Ontario	00218L87
Easton, Douglas	Exeter, Ontario	00223L87
Elexco Ltd.	London, Ontario	00227L87
Elliott, C. Bruce	Grand Bend, Ontario	00966L87
Emerson, Neill W.	Dunnville, Ontario	00233L87
Esso Resources Canada Ltd.	Blenheim, Ontario	00238L87

TABLE I–1. CONTINUED.

Licencee	City/Province	Licence #
Fagan, Steve	London, Ontario	00752L87
Farmer's Oil & Gas Inc.	Wheatley, Ontario	00890L87
Filipetti, Terry M.	London, Ontario	00254L87
Fitzgerald, Norman D.	Abilene, Texas	00257L87
Forbes Resources Inc.	London, Ontario	00261L87
Ford, Harvey	Sarnia, Ontario	00263L87
Fox, E.S.	Welland, Ontario	00265L87
Francisco Petroleum Enterprises Inc.	Chatham, Ontario	00267L87
Fraser, C. Douglas	Lambeth, Ontario	00967L87
French, Bradley W.	Chatham, Ontario	00272L87
Gaiswinkler Enterprises Ltd.	Chatham, Ontario	00278L87
Gaiswinkler, Leo F.	Chatham, Ontario	00280L87
Glenfred Gas Wells Limited	Jarvis, Ontario	00288L87
Grimes, Barry	London, Ontario	00302L87
H. Brett & Associates Limited	Lambeth, Ontario	00305L87
Hall, Leslie	Brigden, Ontario	00313L87
Harmer, D.L.	Scarborough, Ontario	00969L87
Harrison, Geoffrey G.	London, Ontario	00938L87
Hemlock Explorations Limited	Langton, Ontario	00321L87
Herlufsen, Bent E.	London, Ontario	00325L87
Herman, L.T.	Mississauga, Ontario	00970L87
Highridge Exploration Ltd.	Calgary, Alberta	00328L87
Intrex Corporation	Lambeth, Ontario	00342L87
Inwood, R.	London, Ontario	00344L87
J.E. English General Drilling & Well Servicing Ltd.	Port Lambton, Ontario	00346L87
Jeffery, S.J.	London, Ontario	00354L87
Johnson, R.D.	London, Ontario	00356L87
Johnstone, James	Windsor, Ontario	00359L87
K.E. Crawford Limited	Chatham, Ontario	00362L87
Kenartha Oil & Gas Co. Ltd.	Toronto, Ontario	00366L87
Klenk, William C.	Manitowaning, Ontario	00376L87
Kriter, Robert E.	Lambeth, Ontario	00384L87
Lambton Area Industries Ltd.	Petrolia, Ontario	00388L87
Lancaster, Joe	London, Ontario	00391L87
Levere, Dwight	Ancaster, Ontario	00897L87
Malo, J.	Chatham, Ontario	00404L87
Marvan II	Thamesville, Ontario	00412L87
McKenzie, D. Ian	Waterloo, Ontario	00419L87
McKenzie, D.F.	Sarnia, Ontario	00420L87
McKenzie, Dr. Garry D.	Columbus, Ohio	00421L87
McLachlin, D.A.	Wallaceburg, Ontario	00423L87
McVittie, J.N.	Georgetown, Ontario	00425L87
Michigan Oil Company	Jackson, Michigan	00430L87
Mickle, William Paul	London, Ontario	00433L87
Mid Eastern Oil & Gas Limited	London, Ontario	00434L87
Midway Petroleum Company	Clarkston, Michigan	00753L87
Milton Resources Limited	London, Ontario	00437L87
Mitchell Energy Corporation	Columbus, Ohio	00445L87
Mitchell, Philip	London, Ontario	00450L87
Moffat, R.G.	Calgary, Alberta	00974L87
Moore, Bert	Markham, Ontario	00453L87
Morrison, Robert J.	Langton, Ontario	00460L87
Murphy Oil Co. Ltd.	Wallaceburg, Ontario	00463L87
Newport, Lorne T.	Wardsville, Ontario	00473L87
Noble, William G.	Oil City, Ontario	00477L87

TABLE I–1. CONTINUED.

Licencee	City/Province	Licence #
Nomeco Oil & Gas Canada, Inc.	Jackson, Michigan	00468L87
Norman, Dale	London, Ontario	00479L87
Norman, J.L.	London, Ontario	00480L87
Northern Cross Resources Ltd	Toronto, Ontario	00975L87
Oil Field Services	Mooretown, Ontario	00481L87
Opekar, Richard	London, Ontario	00488L87
PPC Oil & Gas Corp.	London, Ontario	00493L87
PanCanadian Petroleum Limited	Calgary, Alberta	00496L87
Patterson Oil Development	Erieau, Ontario	00498L87
Pembina Exploration Limited	Port Colborne, Ontario	00504L87
Penway Explorers Ltd.	Toronto, Ontario	00898L87
Philon Energy Inc.	Chatham, Ontario	00900L87
Pinetree Explorations Limited	Toronto, Ontario	00515L87
Pinnacle Exploration Ltd.	Chatham, Ontario	00980L87
Place Resources Corporation	Calgary, Alberta	00516L87
Polysteel Building Systems Ltd.	Toronto, Ontario	00202L87
Proto-Resources and Associates	Brampton, Ontario	00525L87
P-R & Leo 85	Brampton, Ontario	00729L87
Putman, Patricia S.	Sarnia, Ontario	00528L87
R.G. Bryant Energy Associates Inc.	London, Ontario	00530L87
Raen Petroleum Corp.	London, Ontario	00532L87
Ram Petroleums Limited	London, Ontario	00535L87
Rawlings, F.S.	Chatham, Ontario	00540L87
Realoil Enterprises Limited	Chatham, Ontario	00543L87
Reid, Richard Kenneth	Dutton, Ontario	00547L87
Richards, G.W.	London, Ontario	00552L87
Rife, K.C.	Cambridge, Ontario	00556L87
Robins, Glenn	Dunnville, Ontario	00558L87
Robinson, Randy J.	Wheatley, Ontario	00889L87
Ron Smith Well Drilling Ltd.	Denfield, Ontario	00560L87
Rose Drilling Enterprises Inc.	Walsingham, Ontario	00466L87
Rowe, J.M.	Mt. Brydges, Ontario	00566L87
Rowe, Peter E.	London, Ontario	00567L87
Saul, Francis K.	Langton, Ontario	00573L87
Shackleton, Alvin G.	Chatham, Ontario	00585L87
Shell Canada Limited	Calgary, Alberta	00591L87
Sidasa Petroleums Limited	Kitchener, Ontario	00593L87
Sowesto Land Services Ltd.	London, Ontario	00880L87
Speer, David	Calgary, Alberta	00603L87
Springs Drilling Limited	Oil Springs, Ontario	00606L87
Stevenson, James R.	Grand Bend, Ontario	00902L87
Studnicka, J.L.	Chatham, Ontario	00977L87
Sussex Explorations Limited	London, Ontario	00619L87
Sylab Incorporated	Petrolia, Ontario	00620L87
Talcorp Services Limited	Toronto, Ontario	00623L87
The Consolidated Larder Mines Limited	Guelph, Ontario	00888L87
Thomas, Douglas W.	Port Elgin, Ontario	00978L87
Union Gas Limited	Chatham, Ontario	00644L87
Walking Stick Oil & Gas Ltd.	Calgary, Ontario	00058L87
Wassman, Steven C.	St. Clair, Michigan	00663L87
Wellandport Gas Company	Dunnville, Ontario	00665L87
Wilson, Alexander D.	London, Ontario	00673L87
Wilton, B.	Blenheim, Ontario	00674L87
Wilton, Harold R.	Blenheim, Ontario	00675L87
Woodcock, P.	Chatham, Ontario	00676L87
Yankoviak, Joe	London, Ontario	00981L87

TABLE I–2. PERSONS LICENCED TO CONDUCT GEOPHYSICAL OR GEOCHEMICAL EXPLORATION FOR OIL AND GAS, 1987.

Licencee	City/Province	Licence #
B.G. Environmental Surveys Limited	Rexdale, Ontario	00033G87
Blackwell Petroleum Services Ltd.	London, Ontario	00069G87
Bluewater Oil & Gas Limited	Calgary, Alberta	00074G87
Bowrio Resources Ltd.	Calgary, Alberta	00962G87
Cairnlins Petroleum Services	Komoka, Ontario	00107G87
Canada Cement Lafarge Ltd.	Montreal, Quebec	00116G87
Canadian Occidental Petroleum Ltd.	Calgary, Alberta	00120G87
Canex Petroleum Incorporated	Rexdale, Ontario	00750G87
Cangeo Limited	Oil Springs, Ontario	00124G87
Chemical Projects Limited	Rexdale, Ontario	00142G87
Consolidated Explorer Petroleum Corp.	Calgary, Alberta	00154G87
Devran Petroleum Ltd.	London, Ontario	00186G87
Dome Petroleum Limited	Calgary, Alberta	00196G87
Durl Hopper Limited	Seaforth, Ontario	00212G87
E.P. Rowe Oil Limited	London, Ontario	00218G87
Ecoseis Exploration Ltd.	Lambeth, Ontario	00224G87
Elexco Ltd.	London, Ontario	00227G87
Farmer's Oil & Gas Inc	Wheatley, Ontario	00890G87
Fitzgerald, Norman D.	Abilene, Texas	00257G87
Francisco Petroleum Enterprises Inc.	Chatham, Ontario	00267G87
GraviMetrics Inc.	Tulsa, Oklahoma	00299G87
H. Brett & Associates Limited	Lambeth, Ontario	00305G87
Klenk, William C. III	Manitowaning, Ontario	00376G87
Mid Eastern Oil & Gas Limited	London, Ontario	00434G87
Midway Petroleum Company	Clarkston, Michigan	00753G87
Milton Resources Limited	London, Ontario	00437G87
Mitchell Energy Corporation	Columbus, Ohio	00445G87
Moffat, R.G.	Calgary, Alberta	00974G87
Murphy Oil Co. Ltd.	Wallaceburg, Ontario	00463G87
Nomeco Oil & Gas Canada, Inc.	Jackson, Michigan	00468G87
PPC Oil & Gas Corp.	London, Ontario	00493G87
Pembina Exploration Limited	Port Colborne, Ontario	00504G87
Philon Energy Inc	Chatham, Ontario	00900G87
Phoenix Geophysics Limited	Unionville, Ontario	00899G87
Pinnacle Exploration Ltd	Chatham, Ontario	00980G87
P-R & Leo 85	Brampton, Ontario	00729G87
Proto-Resources and Associates	Brampton, Ontario	00525G87
Raen Petroleum Corp.	London, Ontario	00532G87
Ram Petroleums Limited	London, Ontario	00535G87
Reid, Orin	Cambridge, Ontario	00983G87
Sonics Exploration Ltd.	Calgary, Alberta	00976G87
Spelman Prentice	Casper, Wyoming	00604G87
Springs Drilling Limited	Oil Springs, Ontario	00606G87
The Consumers' Gas Company Ltd.	London, Ontario	00631G87
Union Gas Limited	Chatham, Ontario	00644G87
W.T. Chatham Associates Ltd.	Hamilton, Ontario	00658G87
Walking Stick Oil & Gas Ltd.	Calgary, Alberta	00058G87

TABLE I-3: OWNERS OF LICENCED MACHINES FOR BORING, DRILLING, OR PLUGGING WELLS, 1987

Licencee	City\Province	Licence #
398311 Ontario Limited	Corunna	00001M8701
B & S Rotary Drilling Ltd.	Corunna	00032M8701
839040 Ontario Inc.	Petrolia	00062M8701
Bothwell Drilling & Servicing Ltd.	Lambeth	00084M8701
Charles G. Stevenson Drilling Ltd.	Dresden	00134M8701
		00134M8702
		00134M8703
Charles Shaw Drilling Ltd.	Florence	00135M8701
		00135M8702
		00135M8703
		00135M8704
No Operator Name		00136M8701
Chatham Engineering Ltd.	Hamilton	00988M8701
Circle A Drilling Inc.	Dresden	00145M8701
Corunna Drilling Limited	Corunna	00161M8701
		00161M8702
D.S.I.L. Drilling Inc.	Scarborough	00170M8701
Davidson Well Drilling Limited	Wingham	00175M8701
DeGrow, Leland M.	York	00178M8701
Durl Hopper Limited	Seaforth	00212M8701
Eagle Drilling services Inc.	Chatham	00220M8701
		00220M8702
Glencoe Waterflood Inc.	Glencoe	00286M8701
Instant Water Wells Ltd.	Williamsburg	00340M8701
International Water Supply Ltd.	Barrie	00341M8701
J.E. English General Drilling & Well Servicing Ltd.	Port Lambton	00346M8701
James Newport Drilling Limited	Oil Springs	00352M8701
		00352M8702
Kenneth J. Girard Drilling	Wardsville	00370M8701
No Operator Name		00398M8701
		00398M8702
Longyear Canada Inc.	Concord	00399M8701
Montgmery Bros.	Selkirk	00452M8701
Morningstar Oil Producers Ltd.	Oil Springs	00456M8701
Rose Drilling Enterprises Inc.	Walsingham	00466M8701
Newport, Lorne T.	Wardsville	00473M8701
		00473M8702
		00473M8703
Pembina Resources Limited	Port Colborne	00507M8701
		00507M8702
Place Resources Corporation	Calgary	00516M8701
		00516M8702
Rawlings Drilling Company Limited	Chatham	00538M8701
		00538M8702
		00538M8703
		00538M8704
		00538M8705
		00538M8706
Red Rig Oilwell Servicing Ltd.	Sombra	00545M8701
		00545M8702
Robins, Glenn	Dunnville	00558M8701
Ron Smith Well Drilling Ltd.	Denfield	00560M8701
		00560M8702
		00560M8703

TABLE I–3: CONTINUED.

Licencee	City\Province	Licence #
Rose, Charles	Bothwell	00563M8701
S.J. Atkinson & Son Drilling	Petrolia	00571M8701
Stewart Well Drilling	Jarvis	00615M8701
Underwater Gas Developers Ltd.	London	00643M8701
		00643M8702
		00643M8703
		00643M8704
		00643M8705
Vye, Frank	Petrolia	00657M8701
Wellington Newport & Sons Ltd.	Wardsville	00668M8701
Wright, John	Mindemoya	00979M8701

TABLE I–4: PERSONS LICENCED TO PRODUCE OIL AND GAS, 1987.

Licencee	City\Province	Licence #
398311 Ontario Limited	Corunna, Ontario	00001P87
490960 Ontario Limited	Petrolia, Ontario	00004P87
625052 Ontario Limited	Petrolia, Ontario	00005P87
625138 Ontario Limited	Sarnia, Ontario	00006P87
839040 Ontario Inc.	Petrolia, Ontario	00062P87
A.I.S. Resources Limited	Montreal, Quebec	00008P87
Adanac Oil & Gas Limited	Calgary, Alberta	00010P87
Annett, Robert M.	Bothwell, Ontario	00017P87
Avonry Gas Company Limited	Petrolia, Ontario	00026P87
Ayrheart, Eva	Oil Springs, Ontario	00028P87
Ayrheart, Roy	Petrolia, Ontario	00031P87
Baldwin, David L.	Sarnia, Ontario	00040P87
Barnes, Lonnie	Oil Springs, Ontario	00046P87
Bayview Explorations Ltd.	St. Williams, Ontario	00049P87
Bear Creek Resources Limited	Toronto, Ontario	00052P87
Blackwell Petroleum Services Ltd.	London, Ontario	00069P87
Bluewater Oil & Gas Limited	Calgary, Alberta	00074P87
Bonus Petroleum Corp.	Calgary, Alberta	00080P87
Bradley, Murray	Petrolia, Ontario	00091P87
Bradley, Richard	Petrolia, Ontario	00092P87
Brand, Walt	Petrolia, Ontario	00093P87
Brookwood Oils Inc.	London, Ontario	00096P87
Byers, I.	Oil Springs	00102P87
C.D. Fraser Land Services Limited	Lambeth, Ontario	00103P87
Cairnlins Petroleum Services	Komoka, Ontario	00107P87
Cameron Petroleums Limited	Lambeth, Ontario	00113P87
Canadian Occidental Petroleum Ltd.	Calgary, Alberta	00120P87
Can-Gas Resources	Vittoria, Ontario	00964P87
Cartier Resources Inc.	Toronto, Ontario	00128P87
Charles Fairbank Oil Prop.	Petrolia, Ontario	00133P87
Chatham Resources Limited	Hamilton, Ontario	00139P87
Colonial Petroleums Limited	London, Ontario	00151P87
Comfort, N.E.	Chatham, Ontario	00153P87
Consolidated Explorer Petroleum Corp.	Calgary, Alberta	00154P87
Consolidated West Petroleum Limited	Port Colborne, Ontario	00156P87
Corden, Bruce	St. Clair, Michigan	00159P87
Craven Oil Company Limited	Lubbock, Texas	00162P87
Crich Holdings and Buildings Limited	London, Ontario	00878P87
D.W. Matheson Electric Ltd.	Oil Springs, Ontario	00171P87
Dark Resources Ltd.	Calgary, Alberta	00172P87
Den-Mar Brines Limited	Bothwell, Ontario	00182P87
Devran Petroleum Ltd.	London, Ontario	00186P87
Dome Petroleum Limited	Calgary, Alberta	00196P87
NO OPERATOR RECORD/NAME		00207P87
Dow Chemical canada Inc.	Sarnia, Ontario	00209P87
E.P. Rowe Oil Limited	London, Ontario	00218P87
Edward, R.A.	Petrolia, Ontario	00225P87
Emerson, Neill W.	Dunnville, Ontario	00233P87
Esso Resources Canada Ltd.	Blenheim, Ontario	00238P87
F & M Resources Ltd.	Langton, Ontario	00243P87
Farmer's Oil & Gas Inc.	Wheatley, Ontario	00890P87
Farrants, Robert A.	Thamesville, Ontario	00247P87
Fernlea Flowers Limited	Delhi, Ontario	00252P87
Fisherville Gas Limited	Hamilton, Ontario	00256P87
FitzGerald, Norman D.	Abilene, Texas	00257P87
Forbes Resources Inc.	London, Ontario	00261P87

TABLE I–4: CONTINUED.

Licencee	City\Province	Licence #
Francisco Petroleum Enterprises Inc.	Chatham, Ontario	00267P87
Freeman, Donald G.	Port Rowan, Ontario	00271P87
G.W. Clark Oil & Gas Company	Lambeth, Ontario	00276P87
Gaiswinkler Enterprises Ltd.	Chatham, Ontario	00278P87
George, Eugene	Fort Erie, Ontario	00968P87
George Hyslop Limited	Oshweken, Ontario	00284P87
Glencoe Waterflood Inc.	Glencoe, Ontario	00286P87
Glenfred Gas Wells Limited	Jarvis, Ontario	00288P87
Golden Hubris Inc.	London, Ontario	00292P87
H. Brett & Associates Limited	Lambeth, Ontario	00305P87
Hemlock Explorations Limited	Langton, Ontario	00321P87
Herman, L.T.	Mississauga, Ontario	00970P87
Highridge Exploration Ltd.	Calgary, Alberta	00328P87
Intrex Corporation	Lambeth, Ontario	00342P87
J.W.K. Administration & Associates Ltd.	Brantford, Ontario	00348P87
JMCD Energy Exploration Ltd.	Brantford, Ontario	00349P87
Johnston, Ross	Oil Springs, Ontario	00357P87
Jourika Gas	Tillsonburg, Ontario	00361P87
Judo Resources Inc.	London, Ontario	00901P87
K.E. Crawford Limited	Chatham, Ontario	00362P87
Kenartha Oil & Gas Co. Ltd.	Toronto, Ontario	00366P87
Kersey, Donald	Oil Springs, Ontario	00971P87
Klenk, William C. III	Manitowaning, Ontario	00376P87
Kodyen, L.M.	Dresden, Ontario	00380P87
LMG Oils Limited	London, Ontario	00385P87
Lambton Area Industries Ltd.	Petrolia, Ontario	00388P87
Lincoln Natural Gas Ltd.	Wainfleet, Ontario	00394P87
Lyons, Wilson & Baines Oil Producers	Petrolia, Ontario	00401P87
Marr, Harvey	Wainfleet, Ontario	00406P87
Marvan II	Thamesville, Ontario	00412P87
Metalore Resources Limited	Vittoria, Ontario	00428P87
Michigan Oil Company	Jackson, Michigan	00430P87
Milton Resources Limited	London, Ontario	00437P87
Mitchell Energy Corporation	Columbus, Ohio	00445P87
Mitchell, Gerald	Oil Springs, Ontario	00448P87
Moffat, R.G.	Calgary, Alberta	00974P87
Morningstar Oil Producers Ltd.	Oil Springs, Ontario	00456P87
Morningstar, Lorna	Oil Springs, Ontario	00457P87
Morrison, Doris	Langton, Ontario	00459P87
Morrison, Robert J.	Langton, Ontario	00460P87
Murphy Oil Co. Ltd.	Wallaceburg, Ontario	00463P87
Natural Resource Gas Limited	London, Ontario	00471P87
Nith River Petroleums Ltd.	Cambridge, Ontario	00474P87
Noble, William G.	Oil City, Ontario	00477P87
Northern Cross Resources Ltd.	Toronto, Ontario	00975P87
Northquest Ventures Inc.	Toronto, Ontario	00726P87
Oil Field Services	Mooretown, Ontario	00481P87
Oilfinders' Group	Lambeth, Ontario	00483P87
Ort, C.H.	Niagara Falls, Ontario	00489P87
PPC Oil & Gas Corp.	London, Ontario	00493P87
Patterson Oil Development	Erieau, Ontario	00498P87
Pegg, Leonard A.	Morpeth, Ontario	00503P87
Pembina Exploration Limited	Port Colborne, Ontario	00504P87
Penway Explorers Ltd.	Toronto, Ontario	00898P87
Petrolia Discovery Foundation Inc.	Petrolia, Ontario	00510P87
Philon Energy Inc.	Chatham, Ontario	00900P87

TABLE I–4: CONTINUED.

Licencee	City\Province	Licence #
Pinnacle Exploration Ltd.	Chatham, Ontario	00980P87
Place Resources Corporation	Calgary, Alberta	00516P87
Polysteel Building Systems Ltd.	Toronto, Ontario	00202P87
Pope, William	Bothwell, Ontario	00522P87
Proto-Resources and Associates	Brampton, Ontario	00525P87
Putman, Patricia S.	Sarnia, Ontario	00528P87
R.G. Bryant Energy Associates	London, Ontario	00530P87
Raen Petroleum Corp.	London, Ontario	00532P87
Ram Petroleums Limited	London, Ontario	00535P87
Rayrock Yellowknife Resources Inc.	Chatham, Ontario	00542P87
Realoil Enterprises Limited	Chatham, Ontario	00543P87
Riddell-Hanna Exploration Limited	West Bloomfield, Michigan	00555P87
Robins, Glenn	Dunnville, Ontario	00558P87
Roth and Roth Limited	Bothwell, Ontario	00564P87
Ruch, K.	Stevensville, Ontario	00568P87
S&W Oil Company	Watford, Ontario	00570P87
Sasko Oil and Gas Limited	Calgary, Alberta	00572P87
Sitler, Delbert	Wardsville, Ontario	00595P87
Springs Drilling Limited	Oil Springs, Ontario	00606P87
Sunburst Oil Company	Lambeth, Ontario	00617P87
Sussex Explorations Limited	London, Ontario	00619P87
Sylab Incorporated	Petrolia, Ontario	00620P87
Talcorp Services Limited	Toronto, Ontario	00623P87
The Combined Larder Mines Limited	Guelph, Ontario	00888P87
The Consumers' Gas Company Ltd.	London, Ontario	00631P87
Union Gas Limited	Chatham, Ontario	00644P87
Vye, Frank	Petrolia, Ontario	00657P87
Walking Stick Oil & Gas Ltd.	Calgary, Alberta	00058P87
Wellandport Gas Company	Dunnville, Ontario	00665P87
Woods, Lloyd	Oil Springs, Ontario	00677P87
York Producing Co. Ltd.	Bolivar, New York	00678P87
Zdriluk, Albert M.	Waterford, Ontario	00681P87

Appendix II.
Composite Stratigraphic Column

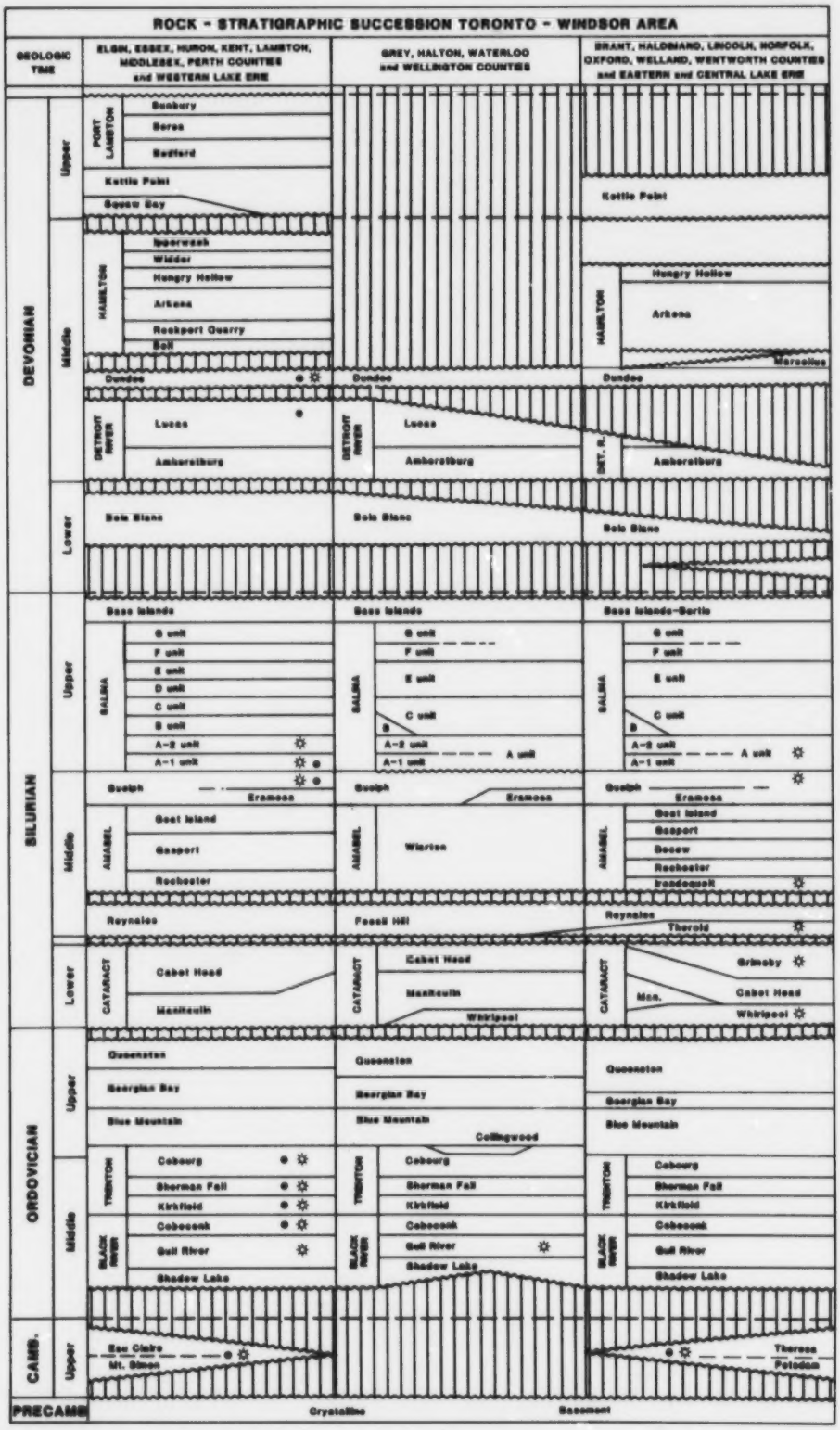

Figure 17. Composite subsurface stratigraphic column.

Appendix III.
List of Publications and Maps

The following publications and maps are available from the following sources:

Reports and Maps (personal shopping or mail order)

The Public Service Centre, Ministry of Natural Resources, Room 1640, Whitney Block, Queens Park, Toronto, Ontario, M7A 1W3. Telephone (416) 965–1348.

Reports and Accompanying Maps (mail or telephone orders)

Publication Services Section, Ministry of Government Services 5th Floor, 880 Bay Street, Toronto, Ontario, M7A 1N8. Telephone (416) 965–6015.

Orders should be accompanied by cheque or money order, payable to the Treasurer of Ontario.

Open File Reports

Copywell, 393 University Ave, Toronto, Ontario, M5G 2J6. Telephone 416–599–5899.

Annual Reports

Annual Report, 1954, Ontario Fuel Board	$1.00
Annual Reports, 1960, 1966, 1967, 1969, 1970	$1.00
Annual Reports, 1971, 1972, 1973, 1974	$5.00
Oil and Gas Paper 1, 1978	$10.00
Oil and Gas Papers 2–9, 1979–86	$20.00

Ontario Geological Survey–Open File Reports

OFR 5498 Evaluation of the Conventional and Potential Oil and Gas Reserves of the Ordovician of Ontario; by Bailey Geological Services Ltd. and Robert O. Cochrane, 1984, 77p., 8 appendices, 35 figures.

OFR 5499 Evaluation of the Conventional and Potential Oil and Gas Reserves of the Cambrian of Ontario; by Bailey Geological Services Ltd. and Robert O. Cochrane, 1984, 72p., 8 appendices, 29 figures.

OFR 5555 Evaluation of the Conventional and Potential Oil and Gas Reserves of the Devonian of Ontario, by Bailey Geological Services Ltd. and Robert O. Cochrane, 1985, 178p., 9 appendices, and 46 figures.

OFR 5578 Evaluation of Conventional and Potential Oil and Gas Reserves of the Silurian Sandstone Reservoirs of Ontario; by Bailey Geological Services Ltd. and Robert O. Cochrane, 1985, 275p., 12 appendices, and 39 figures.

Ontario Geological Survey–Petroleum Resources P. Number Maps Available at a Scale of 1:250,000

All P. Number Maps are 50 cents each unless otherwise specified.

P.2625 Structure Top Trenton Group, North West Area, Southern Ontario

P.2626 Structure Top Trenton Group, South West Area, Southern Ontario

P.2627 Structure Top Trenton Group, South Central Area, Southern Ontario

P.2628 Structure Top Trenton Group, North Central Area, Southern Ontario

P.2629 Structure Top Trenton Group, Eastern Area, Southern Ontario

P.2630 Structure Top Ordovicfian Carbonate, Ottawa Lowlands Area, Southern Ontario

P.2631 Structure Top Black River Group, North West Area, Southern Ontario

P.2632 Structure Top Black River Group, South West Area, Southern Ontario

P.2633 Structure Top Black River Group, South Central Area, Southern Ontario

P.2634 Structure Top Black River Group, North Central Area, Southern Ontario

P.2635 Structure Top Black River Group, Eastern Area, Southern Ontario

P.2637 Isopach Trenton Group, North West Area, Southern Ontario

P.2638 Isopach Trenton Group, South West Area, Southern Ontario

P.2639 Isopach Trenton Group, South West Area, Southern Ontario

P.2640 Isopach Trenton Group, North Central Area, Southern Ontario

P.2641 Isopach Trenton Group, Eastern Area, Southern Ontario

P.2642 Isopach Total Ordovician Carbonate, Ottawa Lowlands Area, Southern Ontario

P.2643 Isopach Black River Group, North West Area, Southern Ontario

P.2644 Isopach Black River Group, South West Area, Southern Ontario

P.2645 Isopach Black River Group, South Central Area, Southern Ontario

P.2646 Isopach Black River Group, North Central Area, Southern Ontario

P.2647 Isopach Black River Group, Eastern Area, Southern Ontario

P.2649 Structure Top Shadow Lake Formation, North West Area, Southern Ontario

P.2650 Structure Top Shadow Lake Formation, South West Area, Southern Ontario

P.2651 Structure Top Shadfow Lake Formation, South Central Area, Southern Ontario

P.2652 Structure Top Shadow Lake Formation, North Central Area, Southern Ontario

P.2653 Structure Top Shadow Lake Formation, Eastern Area, Southern Ontario

P.2654 Structure Base Ordovician Carbonate, Ottawa Lowlands Area

P.2655 Structure Top Precambrian, North West Area, Southern Ontario

P.2656 Structure Top Prevambrian, South West Area, Southern Ontario

P.2657 Structure Top Precambrian, South Central Area, Southern Ontario

P.2658 Structure Top Precambrian, South Central Area, Southern Ontario

P.2659 Structure Top Precambrian, Eastern Area, Southern Ontario

P.2660 Structure Top Precamb rian, Ottawa Lowlands Area, Southern Ontario

P.2661 Isopach Shadow Lake Formation to Precambrian, North West Area, Southern Ontario

P.2662 Isopach Shadow Lake Formation to Precambrian, South West Area, Southern Ontario

P.2663 Isopach Shadow Lake Formation to Precambrian, South Central Area, Southern Ontario

P.2664 Isopach Shadow Lake Formation to Precambrian, North Central Area, Southern Ontario

P.2665 Isopach Shadow Lake Formation to Precambrian, Eastern Area, Southern Ontario

P.2666 Isopach Base Ordovician Carbonate to Precambrian, Ottawa Lowlands Area, Southern Ontario

Ontario Geological Survey–Petroleum Resources P. Number Maps Available at a Scale of 1:100,000

P.2740 Structure, Top Pre-Hamilton, Devonian Carbonates, Lake Erie Map A

P.2741 Structure, Top Pre-Hamilton, Devonian Carbonates, Lake Erie Map B

P.2742 Structure, Top Pre-Hamilton, Devonian Carbonates, Lake Erie Map C

P.2743 Structure, Top Pre-Hamilton, Devonian Carbonates, Lake Erie Map D

P.2744 Structure, Top Pre-Hamilton, Devonian Carbonates, Lake Erie Map E

P.2745 Structure, Top Pre-Hamilton, Devonian Carbonates, Lake Erie Map F

P.2746 Structure, Top Pre-Hamilton, Devonian Carbonates, Lake Erie Map G

P.2747 Structure, Top Pre-Hamilton, Devonian Carbonates, Lake Erie Map H

P.2748 Structure, Top Pre-Hamilton, Devonian Carbonates, Essex County

P.2749 Structure, Top Pre-Hamilton, Devonian Carbonates, Kent County

P.2750 Structure, Top Pre-Hamilton, Devonian Carbonates, Lambton County

P.2751 Structure, Top Pre-Hamilton, Devonian Carbonates, Elgin County

P.2752 Structure, Top Pre-Hamilton, Devonian Carbonates, Elgin County

P.2753 Structure, Top Pre-Hamilton, Devonian Carbonates, Middlesex County

P.2754 Structure, Top Pre-Hamilton, Devonian Carbonates, Oxford County

P.2755 Structure, Top Pre-Hamilton, Devonian Carbonates, Brant County

P.2756 Structure, Top Pre-Hamilton, Devonian Carbonates, Regional Municipality of Niagara

P.2757 Structure, Top Pre-Hamilton, Devonian Carbonates, Huron County

P.2758 Structure, Top Pre-Hamilton, Devonian Carbonates, Perth County

P.2759 Structure, Top Pre-Hamilton, Devonian Carbonates, Bruce County

P.2760 Isopach Gross Columbus Sandstone Section, Lake Erie Map A

P.2761 Isopach Gross Columbus Sandstone Section, Lake Erie Map B

P.2762 Isopach Gross Columbus Sandstone Section, Lake Erie Map C

P.2763 Isopach Gross Columbus Sandstone Section, Lake Erie Map D

P.2764 Isopach Gross Columbus Sandstone Section, Lake Erie Map E

P.2765 Isopach Gross Columbus Sandstone Section, Lake Erie Map F

P.2766 Isopach Gross Columbus Sandstone Section, Lake Erie Map G

P.2767 Isopach Gross Columbus Sandstone Section, Lake Erie Map H

P.2768 Isopach Gross Columbus Sandstone Section, Essex County

P.2769 Isopach Gross Columbus Sandstone Section, Kent County

P.2770 Isopach Gross Columbus Sandstone Section, Lambton County

P.2771 Isopach Gross Columbus Sandstone Section, Elgin County

P.2772 Isopach Gross Columbus Sandstone Section, Regional Municipality of Haldimand-Norfolk

P.2773 Isopach Gross Columbus Sandstone Section, Middlesex County

P.2774 Isopach Gross Columbus Sandstone Section, Oxford County

P.2775 Structure Base Columbus Sandstone, Lake Erie Map A

P.2776 Structure Base Columbus Sandstone, Lake Erie Map B

P.2777 Structure Base Columbus Sandstone, Lake Erie Map C

P.2778 Structure Base Columbus Sandstone, Lake Erie Map D

P.2779 Structure Base Columbus Sandstone, Lake Erie Map E

P.2780 Structure Base Columbus Sandstone, Lake Erie Map F

P.2781 Structure Base Columbus Sandstone, Lake Erie Map G

P.2782 Structure Base Columbus Sandstone, Lake Erie Map H

P.2783 Structure Base Columbus Sandstone, Essex County

P.2784 Structure Base Columbus Sandstone, Kent County

P.2785 Structure Base Columbus Sandstone, Lambton County

P.2786 Structure Base Columbus Sandstone Elgin County

P.2787 Structure Base Columbus Sandstone, Middlesex County

P.2788 Structure Base Columbus Sandstone, Oxford County

P.2789 Isopach Map of the Oriskany-Springvale Sandstone, Lake Erie Map A

P.2790 Isopach Map of the Oriskany-Springvale Sandstone, Lake Erie Map B

P.2791 Isopach Map of the Oriskany-Springvale Sandstone, Lake Erie Map C

P.2792 Isopach Map of the Oriskany-Springvale Sandstone, Lake Erie Map D

P.2793 Isopach Map of the Oriskany-springvale Sandstone, Lake Erie Map E

P.2794 Isopach Map of the Oriskany-Springvale Sandstone, Lake Erie Map F

P.2795 Isopach Map of the Oriskany-Springvale Sandstone, Lake Erie Map G

P.2796 Isopach Map of the Oriskany-Springvale Sandstone, Lake Erie Map H

P.2797 Isopach Map of the Oriskany-Springvale Sandstone, Essex County

P.2798 Isopach Map of the Oriskany-Springvale Sandstone, Kent County

P.2799 Isopach Map of the Oriskany-Springvale Sandstone, Lambton County

P.2800 Isopach Map of the Oriskany-Springdvale Sandstone, Elgin County

P.2801 Isopach Map of the Oriskany-Springvale Sandstone, Regional Municipality of Haldimand-Norfolk

P.2802 Isopach Map of the Oriskany-Springvale Sandstone, Middlesex County

P.2803 Isopach Map of the Oriskany-Springvale Sandstone, Oxford County

P.2804 Isopach Sylvania Sandstone, Essex County-Lake Erie

P.2805 Structure, Top Devonian Sulphur Water-Porosity, Essex County

P.2806 Structure, Top Devonian Sulphur Water-Porosity, Lambton County

P.2807 Structure, Top Devonian Sulphur Water-Porosity, Elgin County

P.2808 Structure, Top Devonian Sulphur Water-Porosity, Elgin County

P.2809 Structure, Top Devonian Sulphur Water-Porosity, Regional Municipality of Haldimand-Norfolk

P.2810 Structure, Top Devonian Sulphur Water-Porosity, Middlesex County

P.2811 Structure, Top Devonian Sulphur Water-Porosity, Oxford County

P.2812 Structure, Top Devonian Sulphur Water-Porosity, Huron County

P.2813 Structure, Top Devonian Sulphur Water-Porosity, Perth County

P.2814 Structure, Top Deovnian Sulphur Water-Porosity, Bruce County

P.2815 Isopach Top Devonian Carbonate to Top Sulphur Water-Porosity, Kent County

P.2816 Isopach Top Devonian Carbonate to Top Sulphur Water-Porosity, Kent County

P.2817 Isopach Top Devonian Carbonate to Top Sulphur Water-Porosity, Lambton County

P.2818 Isopach Top Devonian Carbonate to Top Sulphur Water-Porosity, Elgin County

P.2819 Isopach Top Devonian Carbonate to Top Sulphur Water-Porosity, Regional Municipality of Haldimand-Norfolk

P.2820 Isopach Top Devonian Carbonate to Top Sulphur Water-Porosity, Middlesex County

P.2821 Isopach Top Devonian Carbonate to Top Sulphur Water-Porosity, Oxfrod County

P.2822 Isopach Top Devonian Carbonate to Top Sulpnur Water-Porosity, Regional Municipality of Niagara

P.2823 Isopach Top Devonian Carbonate to Top Sulphur Water-Porosity, Huron County

P.2824 Isopach Top Devonian Carbonate to Top Sulpnur Water-Porosity, Perth County

P.2825 Isopach Top Devonian Carbonate to Top Sulpnur Water-Porosity, Bruce County

P.2862 Silurian Sandstone Oil and Gas Pools, Lake Erie Map A

P.2863 Silurian Sandstone Oil and Gas Pools, Lake Erie Map B

P.2864 Silurian Sandstone Oil and Gas Pools, Lake Erie Map C

P.2865 Silurian sandstone Oil and Gas Pools, Lake Erie Map D

P.2866 Silurian Sandstone Oil and Gas Pools, Lake Erie Map E

P.2867 Silurian Sandstone Oil and Gas Pools, Lake Erie Map F

P.2868 Silurian Sandstone Oil and Gas Pools, Elgin County

P.2869 Silurian Sandstone Oil and Gas Pools, Oxford County

P.2870 Silurian Sandstone Oil and Gas Pools, Regional Municipality of Haldimand-Norfolk

P.2871 Silurian Sandstone Oil and Gas Pools, Brant County, Water-Porosity, Bruce County

P.2872 Silurian Sandstone Oil and Gas Pools, Regional Municipality of Hamilton-Wentworth

P.2873 Silurian Sandstone Oil and Gas Pools, Regional Municipality of Niagara

P.2874 Structure Top Rochester Formation, Lake Erie Map A

P.2875 Structure Top Rochester Formation, Lake Erie Map B

P.2876 Structure Top Rochester Formation, Lake Erie Map C

P.2877 Structure Top Rochester Formation, Lake Erie Map D

P.2878 Structure Top Rochester Formation, Lake Erie Map E

P.2879 Structure top Rochester Formation, Lake Erie Map F

P.2880 Structure Top Rochester Formation, Lake Erie Map G

P.2881 Structure Top Rochester Formation, Lake Erie Map H

P.2882 Structure Top Rochester Formation, Essex County

P.2883 Structure Top Rochester Formation, Kent County

P.2884 Structure Top Rochester Formation, Lambton County

P.2885 Structure Top Rochester Formation, Elgin County

P.2886 Structure Top Rochester Formation, Elgin County

P.2887 Structure Top Rochester Formation, Regional Municipality of Haldimand-Norfolk

P.2888 Structure Top Rochester Formation, Regional Municipality of Haldimand-Norfolk

P.2889 Structure Top Rochester Formation, Brant County

P.2890 Structure Top Rochester Formation, Regional Municipality of Niagara

P.2891 Structure Top Rochester Formation, Regional Municipality of Hamilton-Wentworth

P.2892 Structure Top Rochester Formation, Regional Municipality of Halton

P.2893 Structure Top Rochester Formation, Regional Municipality of Waterloo

P.2894 Structure Top Rochester Formation, Perth County

P.2895 Structure Top Rochester Formation, Huron County

P.2896 Structure Top Rochester Formation, Wellington County

P.2897 Structure Top Rochester Formation, Regional Municipality of Peel

P.2898 Structure Top Rochester Formation, Dufferin County

P.2899 Structure Top Rochester Formation, Simcoe County

P.2900 Structure Top Rochester Formation, Bruce County

P.2901 Structure Top Rochester Formation, Grey County

P.2902 Isopach Silurian Thorold Sandstone, Lake Erie Map A

P.2903 Isopach Silurian Thorold Sandstone, Lake Erie Map B

P.2904 Isopach Silurian Thorold Sandstone, Lake Erie Map C

P.2905 Isopach Silurian Thorold Sandstone, Lake Erie Map D

P.2906 Isopach Silurian Thorold Sandstone, Lake Erie Map E

P.2907 Isopach Silurian Thorold Sandstone, Lake Erie Map F

P.2908 Isopach Silurian Thorold Sandstone, Elgin County

P.2909 Isopach Silurian Thorold Sandstone, Middlesex County

P.2910 Isopach Silurian Thorold Sandstone, Regional Municipality of Haldimand-Norfolk

P.2911 Isopach Silurian Thorold Sandstone, Oxford County

P.2912 Isopach Silurian Thorold Sandstone, Brant County

P.2913 Isopach Silurian Thorold Sandstone, Regional Municipality of Niagara

P.2914 Isopach Silurian Thorold Sandstone, Regional Municipality of Hamilton-Wentworth

P.2915 Isopach Silurian Thorold Sandstone, Wellington County

P.2916 Isopach Silurian Grimsby Sandstone, Lake Erie Map A

P.2917 Isopach Silurian Grimsby Sandstone, Lake Erie Map B

P.2918 Isopach Silurian Grimsby Sandstone, Lake Erie Map C

P.2919 Isopach Silurian Grimsby Sandstone, Lake Erie Map D

P.2920 Isopach Silurian Grimsby Sandstone, Lake Erie Map E

P.2921 Isopach Silurian Grimsby Sandstone, Lake Erie Map F

P.2922 Isopach Silurian Grimsby Sandstone, Elgin County

P.2923 Isopach Silurian Grimsby Sandstone, Middlesex County

P.2924 Isopach Silurian Grimsby Sandstone, Regional Municipality of Haldimand-Norfolk

P.2925 Isopach Silurian Grimsby Sandstone, Oxford County

P.2926 Isopach Silurian Grimsby Sandstone, Brant County

P.2927 Isopach Silurian Grimsby Sandstone, Regional Municipality of Niagara

P.2928 Isopach Silurian Grimsby Sandstone, Regional Municipality of Hamilton-Wentworth

P.2929 Isopach Silurian Whirlpool Sandstone, Lake Erie Map A

P.2930 Isopach Silurian Whirlpool Sandstone, Lake Erie Map B

P.2931 Isopach Silurian Whirlpool Sandstone, Lake Erie Map C

P.2932 Isopach Silurian Whirlpool Sandstone, Lake Erie Map D

P.2933 Isopach Silurian Whirlpool Sandstone, Lake Erie Map E

P.2934 Isopach Silurian Whirlpool Sandstone, Lake Erie Map F

P.2935 Isopach Silurian Whirlpool Sandstone, Lake Erie Map G

P.2936 Isopach Silurian Whirlpool Sandstone, Elgin County

P.2937 Isopach Silurian Whirlpool Sandstone, Middlesex County

P.2938 Isopach Silurian Whirlpool Sandstone, Oxford County

P.2939 Isopach Silurian Whirlpool Sandstone, Regional Municipality of Haldimand-Norfolk

P.2940 Isopach silurian Whirlpool Sandstone, Brant County

P.2941 Isopach Silurian Whirlpool Sandstone, Regional Municipality of Niagara

P.2942 Isopach Silurian Whirlpool Sandstone, Regional Municipality of Hamilton-Wentworth

P.2943 Isopach Silurian Whirlpool Sandstone, Regional Municipality of Halton

P.2944 Isopach Silurian Whirlpool Sandstone, Wellington County

P.2945 Isopach Silurian Whirlpool Sandstone, Regional Municipality of Peel

P.2946 Isopach Silurian Whirlpool Sandstone, Dufferin County

P.2947 Isopach Silurian Whirlpool Sandstone, Grey County

P.2948 Isopach Silurian Whirlpool Sandstone, Somcoe County

P.2992 Isopach Top Guelph to Top Rochester, Lake Erie Map A

P.2993 Isopach top Guelph to Top Rochester, Lake Erie Map B

P.2994 Isopach Top Guelph to Top Rochester, Lake Erie Map C

P.2995 Isopach Top Guelph to Top Rochester, Lake Erie Map D

P.2996 Isopach Top Guelph to Top Rochester, Lake Erie Map E

P.2997 Isopach Top Guelph to Top Rochester, Lake Erie Map F

P.2998 Isopach Top Guelph to Top Rochester, Lake Erie Map G

P.2999 Isopach Top Guelph to Top Rochester, Lake Erie Map H

P.3000 Isopach Top Guelph to Top Rochester, Essex County

P.3001 Isopach Top Guelph to Top Rochester, Kent County

P.3002 Isopach Top Guelph to Top Rochester, Lambton County

P.3003 Isopach Top Guelph to Top Rochester, Middlesex County

P.3004 Isopach Top Guelph to Top Rochester, Elgin County

P.3005 Isopach Top Guelph to Top Rochester, Oxford County

P.3006 Isopach Top Guelph to Top Rochester, Regional Municipality of Haldimand-Norfolk

P.3007 Isopach Top Guelph to Top Rochester, Brant County

P.3008 Isopach Top Guelph to Top Rochester, Regional Municipality of Niagara

P.3009 Isopach Top Guelph to Top Rochester, Regional Municipality of Hamilton-Wentworth

P.3010 Isopach Top Guelph to Top Rochester, Regional Municipality of Halton

P.3011 Isopach Top Guelph to Top Rochester, Regional Municipality of Waterloo

P.3012 Isopach Top Guelph to Top Rochester, Perth County

P.3013 Isopach Top Guelph to Top Rochester, Huron County

P.3014 Isopach Top Guelph to Top Rochester, Wellingotn County

P.3015 Isopach Top Guelph to Top Rochester, Regional Municipality of Peel

P.3016 Isopach Top Guelph to Top Rochester, Dufferin County

P.3017 Isopach Top Guelph to Top Rochester, Simcoe County

P.3018 Isopach Top Guelph to Top Rochester, Bruce County

P.3019 Isopach Top Guelph to Top Rochester, Grey County

P.3020 Structure Top Salina A-2 Carbonate, Lake Erie Map A

P.3021 Structure Top Salina A-2 Carbonate, Lake Erie Map B

P.3022 Structure Top Salina A-2 Carbonate, Lake Erie Map C

P.3023 Structure Top Salina A-2 Carbonate, Lake Erie Map D

P.3024 Structure Top Salina A-2 Carbonate, Lake Erie Map E

P.3025 Structure Top Salina A-2 Carbonate, Lake Erie Map F

P.3026 Structure Top Salina A-2 Carbonate, Lake Erie Map G

P.3027 Structure Top Salina A-2 Carbonate, Lake Erie Map H

P.3028 Structure Top Salina A-2 Carbonate, Essex County

P.3029 Structure Top Salina A-2 Carbonate, Kent County

P.3030 Structure Top Salina A-2 Carbonate, Lambton County

P.3031 Structure Top Salina A-2 Carbonate, Middlesex County

P.3032 Structure Top Salina A-2 Carbonate, Elgin County

P.3033 Structure Top Salina A-2 Carbonate, Oxford County

P.3034 Structure Top Salina A-2 Carbonate, Haldimand-Norfolk

P.3035 Structure Top Salina A-2 Carbonate, Brant County

P.3036 Structure Top Salina A-2 Carbonate, Regional Municipality of Niagara

P.3037 Structure Top Salina A-2 Carbonate, Regional Municipality of Waterloo

P.3038 Structure Top Salina A-2 Carbonate, Perth County

P.3039 Structure Top Salina A-2 Carbonate, Huron County

P.3040 Structure Top Salina A-2 Carbonate, Bruce County

P.3041 Structure Top Salina A-2 Carbonate, Wellington County

P.3042 Formation Subcrop Map, Manitoulin Island

P.3054 Structure Top Salina A-2 Carbonate, Grey County

Miscellaneous Publications

Paper 70-2 Gas Analysis Ontario Gas Wells $1.00

Paper 70-4 Supplement to Catalogue of Ontario Well Samples at the Geological Survey of Canada $1.00

Minutes and Seconds expressed as Decimal parts of a Degree MP/3 no charge

Petroleum Possibilities of the James Bay Lowland Area - Volume 61, Part 6 (maps included), 1952 $1.50

Industrial Mineral Report No. 6, Salt in Ontario by D.F. Hewitt, 1962 $1.50

MAPS

The following maps and copies of well history cards and related technical information may be obtained by writing to: Petroleum Resources Section, Ministry of Natural Resources, P.O. Box 5463, London, Ontario N6A 4L6 (519-661-2766).

Well history cards may also be obtained at the Petroleum Resources Laboratory (519-661-2796).

Well Location and Status (Current)

NTS Series - Key Map
Scale 1:30,000 $1.50 each

A2,3	(A3 Pelee Island)
B1 to 5	(inclusive)
C1 to 7	(inclusive)
D1 to 13	(inclusive)
E4 to 18	(inclusive)
F4 to 17	(inclusive)
G6 to 10	(inclusive)
H7 to 9	(inclusive)
I7 to 9	(inclusive)
J7 to 8	(inclusive)
K7 to 8	(inclusive)
Q5 to 6	(Manitoulin Island)

Lake Erie

Scale 1:50,000
Showing Well and Pipeline Locations
(West Longitude) $3.00 each

Lake Erie Map A	79° 30′ – 78° 55′
Lake Erie Map B	80° 00′ – 79° 30′
Lake Erie Map C	80° 30′ – 80° 00′
Lake Erie Map D	81° 00′ – 80° 30′
Lake Erie Map E	81° 31′ – 81° 00′
Lake Erie Map F	82° 00′ – 81° 30′
Lake Erie Map G	82° 30′ – 82° 00′
Lake Erie Map H	83° 10′ – 82° 30′

Geological Maps

Geology Toronto–Windsor Area
1263A (1969)
Scale 1:250,000 2.50 each

Field and Pool Maps

Scale 1:20,000 $1.00 each

Aldborough 4–20–VII	Hemlock
Arthur	Hillman
Colchester	Innerkip
Becher West	Innerkip East
Bentpath	Kimball–Colinville, Payne, Seckerton
Bickford	Ladysmith
Brigden	Malden
Clearville	Moore 2–13–VIII
Corunna	Moore 7–6–III
Corey East	Moore 3–21–XII
Courtright	Oil City
Coveny	Oil Springs
Cromar	Oil Springs East
Crowland	Osborne
Dawn 4–28–III	Otter Creek–Otter Creek East
Dawn 4–33–IX	Oxley
Dawn 5–27–III	Plympton 5–19–VI
Dawn 5–30–IV	Rodney
Dawn 7–28–V	Rosedale
Dawn 23–II	Ruscom River
Dawn 47–49	Sarnia 1–8–A
Dawn 59–85	St. Patricks
Dawn 156	Sombra
Dawn 167	Terminus–Terminus North
Dawn Sombra	Tipperary–Tipperary South
Dover	Townsend
Dover 1–11–V	Venison Creek
Dover 7–5–V E	Verscoyle West
Dungannon	Waubuno
Enniskillen 2–30–IX	Wilkesport
Enniskillen 28	Willey
Glencoe	Willey North
Gobles	Wilsonville
Gosfield South	Wilsonvbille South
Grand Bend	Zone

Oil And Gas Pool & Pipeline Map Of Southwestern Ontario, P.2499

Scale 1:250,000 $1.50 each

Lake Erie Land Disposition Map

Color plot $50.00
Autocad .DWG file on
5¼" or 3½" diskette $100.00

Location Of Seismic Lines, Southwestern Ontario

Scale 1:100,000 $.50 each

1979 7 Maps P.2573 to P.2579 (inclusive)
1980 8 Maps P.2707 to P.2714 (inclusive)

XEROX FACILITIES

Xerox copies of all production reports, engineering reports, core analyses and well history cards $.25 each

MICROFICHE

Hudson Bay - James Bay Microfiche Index Assessment Reports. These reports are out-of- print. A set of reports is on file at the Petroleum Resources Laboratory.

INDEX NUMBER	CONTENTS
A	Field report general geological reconnaisance of Hudson Bay - summer 1908
B	Detailed geomorphic evaluation of James Bay
C	Detailed geomorphic evaluation James Bay Lowlands Aquintaine (compiled by geophoto
D	Studies of samples collected around the Hudson Bay Lowlands & Northern Islands - Canada summer 1968. Comparisons with Kaskattama No. 1 well - 1969.
E	Aeromagnetic interpretation for part of Moosonee River Basin, District of Cochrane, Aquintaine 1969
F	Aerial magnetic interpretation Moose River area, Mid-eastern Oil and Gas Ltd., Anthony Oil and Gas Explorations Ltd., Dolphin Explorations Ltd.
G	Gravity survey, Moose River area, Mid-eastern Oil & Gas Ltd., Anthony Oil & Gas Ltd., Dolphin Explorations Ltd.
H	Gravity survey, Fort Severn Area, Mid-eastern Oil & Gas Ltd., Anthony Oil & Gas Explorations Ltd., Dolphin Explorations Ltd.
I	Aerial magnetic interpretation, Fort Severn area, Mid-eastern Oil & Gas Ltd., Anthony Gas & Oil Explorations Ltd., Dolphin Explorations Ltd.
J	Aerial magnetic interpretation, Moose River area, Transalta Oil & Gas Ltd.
K	Gravity Survey, Moose River area, Tansalta Oil & Gas Ltd.
L	Transalta - Geological Report, Licence No. 14502 and 14503 - James Bay
M	Aquintaine - Laboratory Report Pen. No. 1 well

N Bluewater – geomorphic evaluation, Moose River Basin

O Bluewater – Geology, James Bay

P Bluewater – Geology, James Bay

Q Mariner – geology and petroleum possibilities, Moose River Basin

R Quintaine – Palynoplanklogical study, Sandbank Lake No. 1 Well

S Consumers' – Aeromagnetic interpretation, James Bay

T Consumers' – Interpretation of G.S.C. Aeromagnetic Survey Soweska River, James Bay

U Aquitaine – 1. High Sensitivity Aeromagnetic Survey, James Bay. 2. Refraction and gravity, James Bay

V Aquitaine – Refraction and gravity survey, Hambly Lake Well No. 1

W Consumers' – Aeromagnetic Survey, Martinson Lake Report on Airborne Magnetometer surveys for Aquitaine – James Bay Lowlands (not microfilmed)

OUT OF PRINT

Out of print originals are on file with the Mines Library, Ministry of Northern Development and Mines, 77 Grenville St., Room 812, Toronto, Ontario, M5S 1B3 (416-965-1352)

Annual Reports for 1920–1953, 1955–1959, 1961–1965, 1967, 1968.

Paper 67-2. A Guide to the Subsurface Paleozoic Stratigraphy of Southern Ontario, By R.J. Beards.

Paper 68-2. Subsurface Disposal of Liquid Wastes in Ontario, by D.D. McLean.

Paper 71-2. Structural Geology of Southwestern Ontario and Southeastern Michigan, by Robert J. Brigham.

Paper 73-2. The Oil and Gas Potential of the "Clinton-Cataract" Reservoirs of Norfolk County, by T.A. MacDougall.

Report of the Committee on Oil and Gas Resources Part 1 (Offshore Activity – 1961) Part 2 (Underground Storage of Natural Gas – 1962).

Index of Ordovician and Cambrian Wells Drilled in Southwestern Ontario Prior to 1963, by D.A. Sharp

Paper 11-1a. Background paper on Ontario Petroleum Resources.

Offshore Exploration in Great Lakes Region, by Bryson C. Donnan, 1961.

Geological Circular 7. Offshore exploration for Gas Under the Canadian Waters of the Great Lakes, by A.C. Newton and W.E. Koepke, 1964.

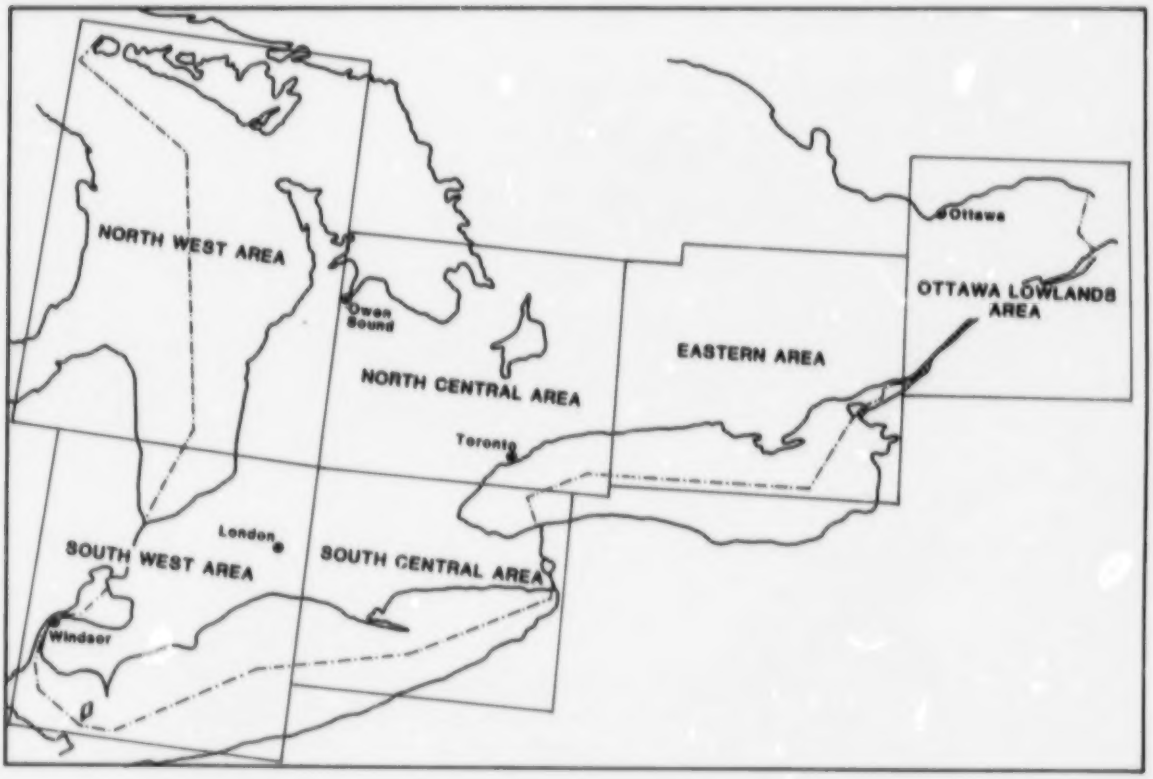

Figure 18. Key map for O.G.S. Petroleum Resources P. Number maps (1:250,000).

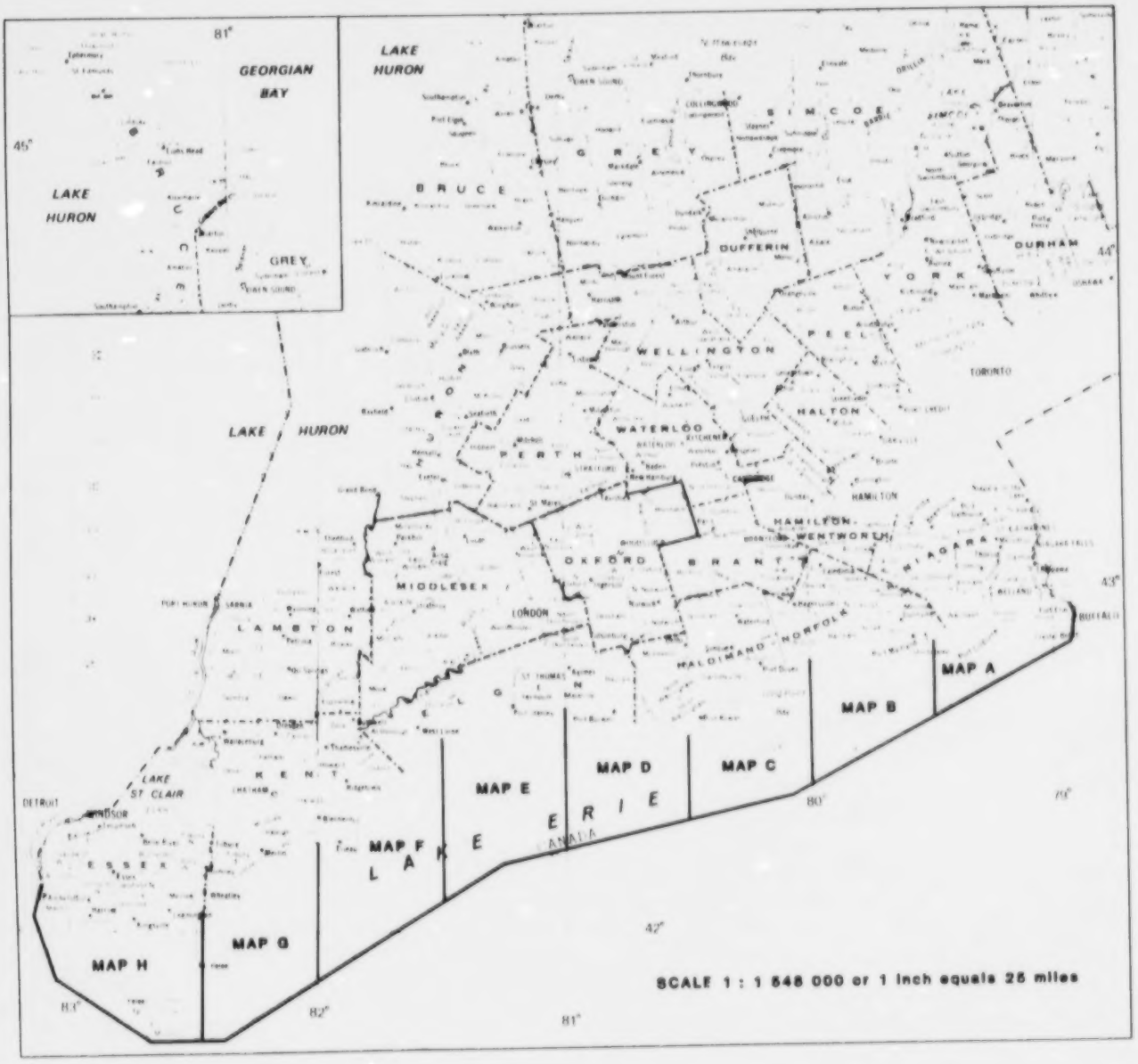

Figure 19. Key map for O.G.S. Petroleum Resources P. Number maps (1:100,000).

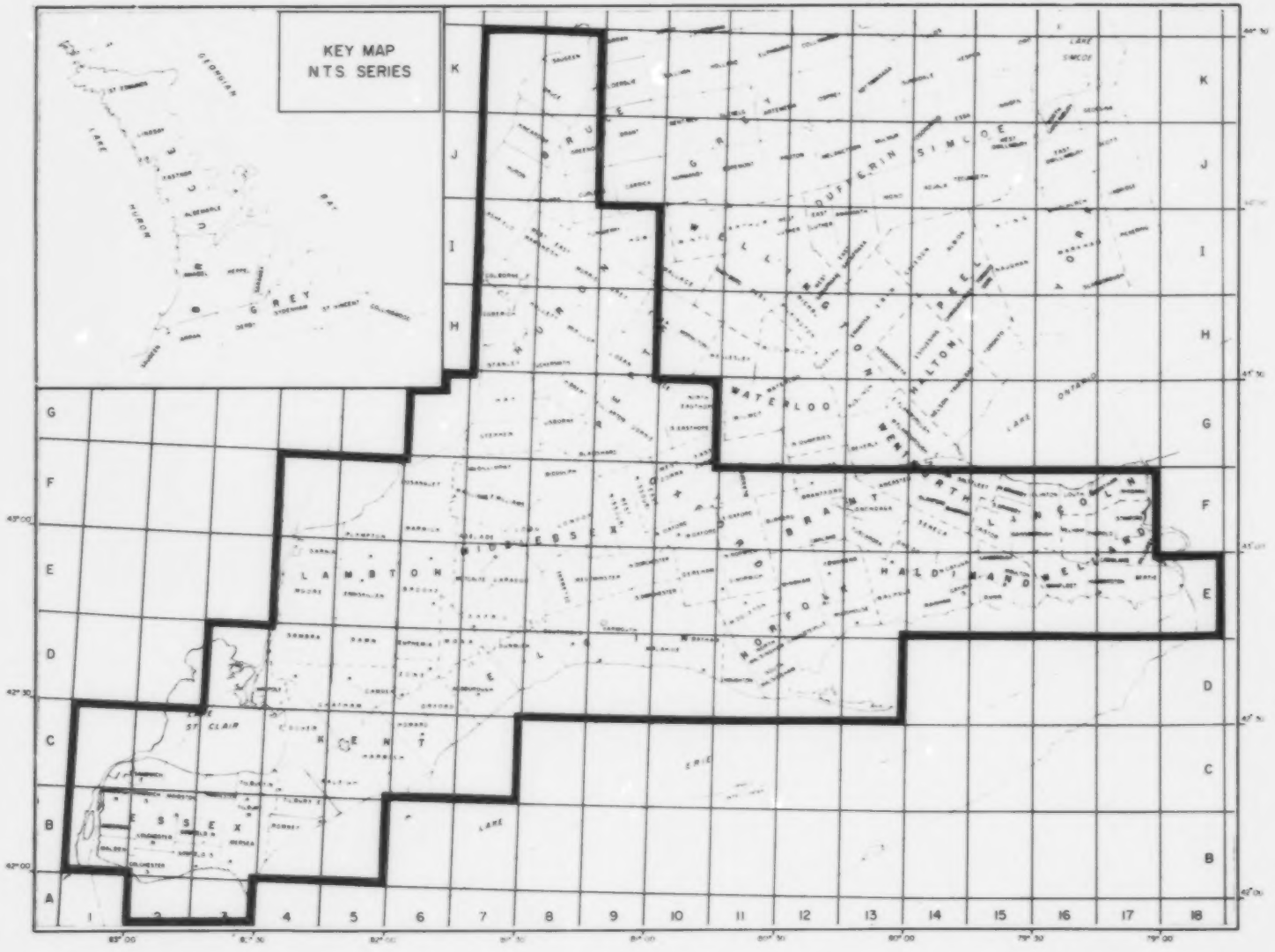

Figure 20. Key map for (NTS Series) well location and status base maps, onshore - southwestern Ontario (1:30,000).

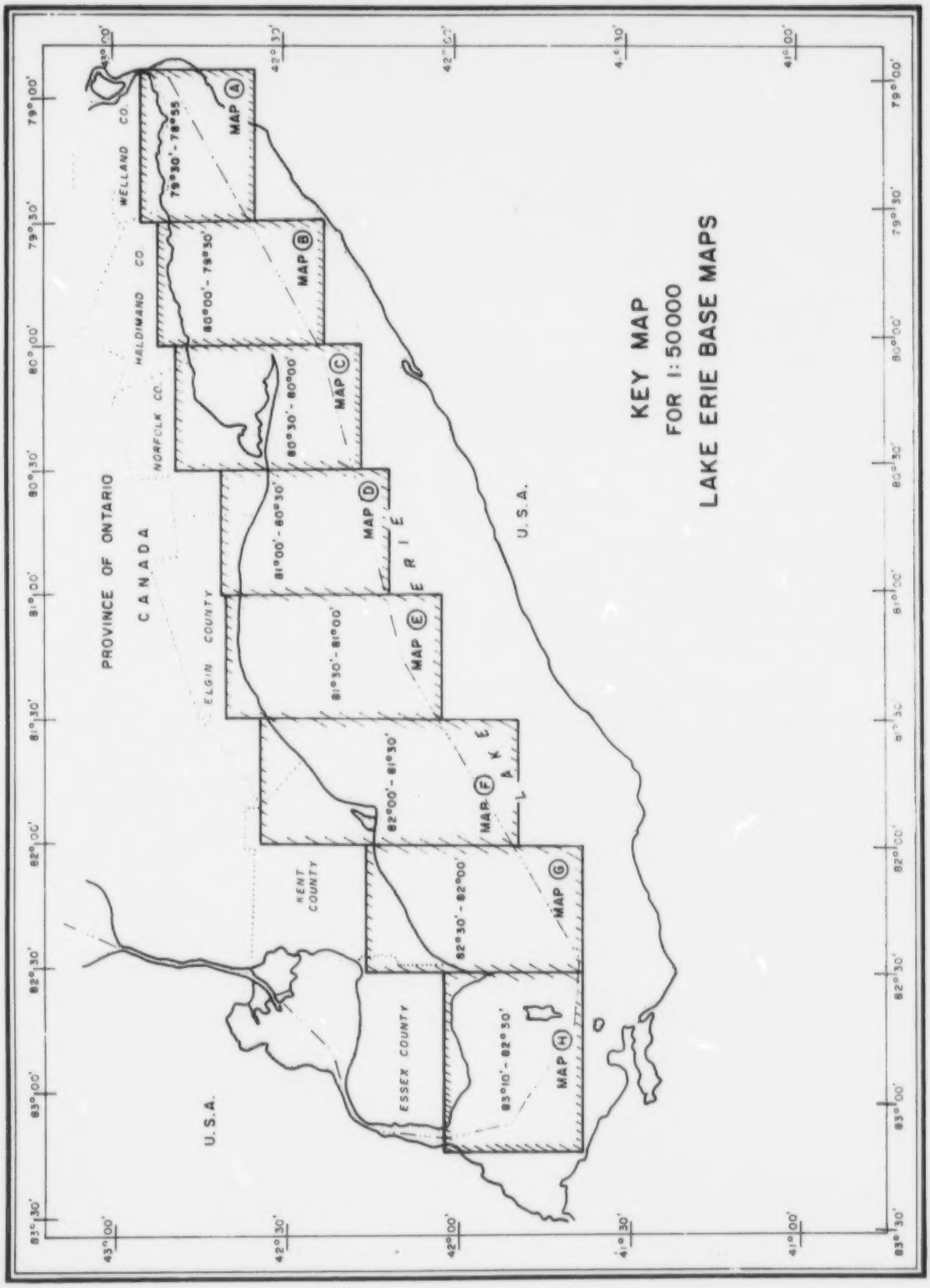

Figure 21. Key map for Lake Erie well location and status base maps (1:50,000).

Appendix IV.
Explanation of Data Items and Abbreviations

WELL NAME: The official name of the well as issued on the Permit to Bore, Drill, or Deepen a Well (Form 106).

PERMIT NO.: This number is assigned to the well location upon approval of the Application for a Permit to Bore, Drill, or Deepen a Well. Where the original location is abandoned as a result of drilling or completion difficulties, and the rig is moved or skidded to a new location within the same drilling tract, the original Permit No. using the alphabetical suffix "A" will apply to the second well.

CLASSIFICATION: Each well is classified at the time the Application for a Permit to Bore, Drill, or deepen a Well is approved.

Classification Codes

NPW	New Pool Wildcat
DPT	Deeper Pool Test
SPT	Shallower Pool Test
DEV	Development
BD	Brine Disposal
BW	Natural Brine Production
INJ	Injection
LPG	Liquid Petroleum Gas Storage
NGS	Natural Gas Storage
OBS	Observation
SM	Solution Mining
STR	Stratigraphic Test

TARGET: Chronostratigraphic system or lithostratigraphic group which include the rock unit which is the primary target of the well being drilled.

Seven primary targets are recognized in Ontario.

DEV	Devonian
SIL	Silurian - unsubdivided
SAL	Silurian - targets within the Salina Group and Guelph Formation in particular, and the Rochester to Bass Islands Formations inclusive.
CLI	Silurian - targets within the Clinton and Cataract (or Medina) Groups (Whirlpool to Irondequoit Formations inclusive).
ORD	Ordovician
CAM	Cambrian
PRE	Precambrian (usually stratigraphic tests).

CURRENT STATUS: Status of the well following drilling and completion (if attempted).

Current Status Codes

GP	Gas Producer
GP-SUS	Gas Producer-Suspended
GP-ABD	Gas Producer-Abandoned
GS	Gas Show
GS-SUS	Gas Show-Suspended
GS-ABD	Gas Show Abandoned
OP	Oil Producer
OP-SUS	Oil Producer-Suspended
OP-ABD	Oil Producer-Abandoned
OS	Oil Show
OS-SUS	Oil Show-Suspended
OS-ABD	Oil Show-Abandoned
BD	Brine Disposal
BD-SUS	Brine Disposal-Suspended
BD-ABD	Brine Disposal-Abandoned
BP	Brine Producer
BP-SUS	Brine Producer-Suspended
BP-Abd	Brine Producer-Abandoned
DH	Dry Hole
DH-SUS	Dry Hole-Suspended
DH-ABD	Dry Hole-Abandoned
INJ	Injection
INJ-SUS	Injection-Suspended
INJ-ABD	Injection-Abandoned
LOST-SUS	Lost-Suspended
LOST-ABD	Lost-Abandoned
LPG	Liquid Petroleum Storage
LPG-SUS	Liquid Petroleum Storage-Suspended
LPG-ABD	Liquid Petroleum Storage-Abandoned
NGS	Natural Gas Storage
NGS-SUS	Natural Gas Storage-Suspended
NGS-ABD	Natural Gas Storage-Abandoned
OBS	Observation
OBS-SUS	Observation-Suspended
OBS-ABD	Observation-Abandoned
SOURCE	Water Source Well
SOURCE-SUS	Water Source Well-Suspended
SOURCE-ABD	Water Source Well-Abandoned
STR-SUS	Stratigraphic Test-Suspended
STR-ABD	Stratigraphic Test-Abandoned

RESULTS: Results of the drilling operation. The results are usually but not necessarily the same as the well status following completion. For example, a reentry of an existing oil producer for a deeper pool test may be unsuccessful in discovering a new accumulation of hydrocarbons at the target horizon. Consequently the results of the drilling operation would be DH, but the status would be OP if the well is recompleted at the original producing interval.

GEOGRAPHIC DESCRIPTION: Wells are listed alphabetically by County, Township, Block, Tract, Lot and Concession.

Abbreviations for concessions

ENR	East of North Road
NER	North Egremont Road
NLR	North Lake Road
NTR	North Talbot Road
RR	River Range
SER	South of Egremont Road

SMR	South of Malden Road
STR	South Talbot Road

CO-ORDINATES: Surveyed co-ordinates for all land wells are given in metres from lot lines, unless otherwise stated. Surveyed co-ordinates for lake wells are recorded by latitude and longitude, in degrees, minutes, and seconds. Latitude and longitude values for all land wells have also been determined and appear in this report.

KB ELEVATION: Ground elevation in metres above sea level plus number of metres to rig floor or kelly bushing.

RIG TYPES: Abbreviation for rig types are as follows:

CAB	Cable Tool Rig
ROT	Rotary Rig
UNK	Unkown

SAMPLES: Drill cuttings samples are retained for all wells and are available for examination at:

Petroleum Resources Laboratory
Ontario Ministry of Natural Resources
659 Exeter Road
London, Ontario, Canada
N6E 1L3

CORES: The intervals cored are given and unless otherwise stated, the cores are stored at the Petroleum Resources Laboratory. Core Type Codes

CC1	2.5 cm Wedge
CC2	Conventional (greater than 5 cm)
CCF	Full Width Slab
CCO	Core Chips Only
RSO	Representative Sections Only
SC2	Slimhole (Less than 5 cm)
SCS	Slimhole Slabbed

TREATMENT: If a well has been stimulated to increase production, a treatment code is included to indicate the type of stimulation program.

Treatment Type Codes

ACID	Acidized
CONF	Fracture-conventional
OYNM	Explosives-dynamite
FOAM	Fracture-foam
LARF	Fracture-large volume
NTGY	Explosives-nitroglycerine
SHOT	Explosives-shot

LOGGING RECORD: The type of logs taken at the well and the logging company are recorded.

Log Type Codes

ACSL	Acoustic
CALP	Caliper
CBLK	Cyberlook
CBND	Cement Bond
CBVD	Cement Bond Variable Density
CCL	Cosing Collar Locator
CDM	Continuous Dipmeter
CFLO	Continuous Flowmeter
CIS	Customer Instrument Services
CLDL	Chloride Detection
CMPL	Completion
CNFD	Compensated Neutron-Formation Density
CNL	Compensated Neutron
COAL	Coal
COL	Carbon/Oxygen
CONL	Contact
CORI	Coriband
DENL	Density
DIFS	Dual Induction Spherically Focussed Laterlog
DIL	Dual Induction Laterolog
DILS	Dual Induction/Sonic
DIPM	Dipmeter
DIRS	Directional Survey
DLL	Dual Laterolog
DLLM	Dual Laterolog Micro SFL
EAS	Epilog Analysis System
ELPR	Electromagnetic Propagation
ES	Electric Survey
FDC	Formation Density Compensated
FFLO	Full Bore Flowmeter
FIT	Fomation Internal Tester
FOCL	Focus
FRID	Fracture Identification
FRXL	Forxo
GGDE	Gamma-Gamma Density
GRAD	Gradiometer
GRDL	Guard
GRFD	Gamma Ray-Formation Density
GRL	Gamma Ray
GRNL	Gamma Ray-Neutron
GRSL	Gamma Ray-Sonic
GSAR	Geothermal Saraband
HCDS	Hydrocarbon or Gas
HEL	Hostile Environment
HRT	High Resolution Thermometer
IES	Induction Electric Survey
ISF	Induction Spherically Focussed
ISFM	ISF Microspherically Focussed
ISOL	Isotron
LASL	Laser
LATL	Dual Laterolog
LDT	Lithodensity
LSL	Limestone
LSS	Long-spaced Sonic
MAGL	Nuclear Magnetism
MICL	Microlog
MLAT	Microlaterolog
MICS	Microsurvey
MINF	Minifocus
MINL	Minilog
MLAL	Forxo
MLAT	Microlaterolog
MPL	Mechanical Properties
MSFL	Micro-Spherically Focussed Laterolog
MSGM	Microseismogram
NEUT	Neutron

NFLO	Nuclear Flowlog
NGRS	Natural Gamma Ray Spectroscopy
PCT	Production Combination Tool
PEF	Photoelectric Effect
PHOT	Photon
PIP	Precision Identified Perforations
PML	Production Management
PRMS	Permeability Spinner
PRXL	Proximity
PWAS	Prolog Wellsite Analysis System
PXML	Proximity Microlog
RFT	Repeat Formation Tester
RTRS	Radioactive Tracer Survey
SARA	Saraband
SCAT	Scattered Gamma
SNP	Sidewall Neutron Porosity
SONA	Borehole Audio Tracer Survey
SONL	Sonic
SONR	Sonar
SP	Self Potential
SRPG	Surface Recorded Pressure Guage
SRSL	Seismic Reference
SUL	Sulfur
SYRG	Synergetic Log System
TDL	Temperature Differ
TDST	Through Drillstem Logging
TDT	Thermal Neutron Decay Time
TEL	Thermal Evaluation
TMPL	Temperature
TTC	Through Tubing Caliper
ULSE	Ultra Long Spaced Electrical
VDL	Variable Density
VELS	Velocity Survey
VERL	Vertilog
WLS	Water Location Survey
WST	Well Seismic Tool
XPTL	Experimental

CASING AND TUBING RECORD: Abbreviations for how the casing and tubing are set in the well.

ANC	Anchor Packer
BAR	Barefoot
BHP	Bottom Hole Packer
CEM	Cemented
COL	Collar
HAN	Hanging
HWP	Hook Wall Packer
PAC	Packer
PC	Packer and Cement
SHO	Casing Shoe

WATER RECORD: Abbreviations for type of water encountered while drilling a well.

BRA	Brackish
BLK	Black
FRE	Fresh
SAL	Salt
SUL	Sulfur

GEOLOGY: The geological formation picks are supplied by OMNR geologists. Unpublished operator formation picks are available on Drilling and Completion Records submitted by the operators to the Ministry.

The nomenclature used in this report is based on published descriptions of the various geological units.

Appendix V.
Summary of Wells Drilled in 1987

TABLE V-1: SUMMARY OF WELLS DRILLED IN 1987

Well Name	Permit Number	Completion Date	Target	Total Depth in Metres	Class	Results	Producing Formation	Metres Drilled	Sample Tray Number
ELGIN									
Realoil No. 10 Aldborough 4-A-VIII	7170	87.11.02	CAM	1237.2	DPT	DH		48.5	5832-33
Subtotal				1237.2				48.5	
ESSEX									
Pembina Maxus Anderdon 2-11-V	7191	87.11.13	ORD	1119.0	NPW	GS-ABD		1119.0	
Pembina Dia-Sham Anderdon 8-11-VI	7115	87.05.26	ORD	302.5	NPW	LH-ABD		302.5	6783
Pembina Dia-Sham Anderdon 8A-11-VI	7115A	87.07.12	ORD	1125.0	NPW	GS-ABD		1125.0	9187-88
Brine Well D-1 Anderdon 33-I	7157	87.11.02	SAL	371.2	SM	SM	B-Salt	371.2	7943
Brine Well D-8 Anderdon 33-I	7158	87.10.20	SAL	372.5	SM	SM	B-Salt	372.5	7943
Cons 34211 Colchester North 1-34-SMR	7106	87.02.10	ORD	1074.0	NPW	DH-ABD		1074.0	9185-86
Cons/Paladin 34312 Gosfield South 1-I-III	7187	87.10.14	ORD	1050.0	NPW	OS-GS-ABD		1050.0	9230-31
Consumers' 34210 Gosfield South 8-7-V	7102	87.01.30	ORD	1048.0	NPW	OS-GS-ABD		1048.0	9178-79
Consumers' 34305 Maidstone 6-16-VI	7185	87.09.24	ORD	1123.0	NPW	OS-ABD		1123.0	9214-15
Cons/Ram 34246 Maidstone 7-17-V	7109	87.02.27	ORD	1120.0	NPW	OP-SUS	Verulam	1120.0	9176-77
Consumers' 34304 Maidstone 4-18-V	7181	87.09.11	ORD	1120.0	DEV	OS-ABD		1120.0	9236-37
Cons et al 34105 Mersea 3-11-I	7175	87.08.26	ORD	868.0	DEV	OP	Cobourg,Verulam	868.0	9285-86
Cons et al 34103 Mersea 2-15-B	7097	87.01.14	ORD	876.8	DEV	OP	Cobourg,Verulam	876.8	9170-71
Cons et al 34335 Mersea 3-15-I	7201	87.11.25	ORD	1071.0	NPW	DH-SUS		1071.0	9365-66
Ram 99 Mersea 7-19-VIII	7200	87.12.18	ORD	1081.0	NPW	OP	Cobourg	1081.0	9281-82
Cons et al 34150 Mersea 2-20-VII	7168	87.08.13	ORD	1090.0	NPW	OP-GS	Cobourg,Verulam	1090.0	9274-75
Cons et al 34282 Mersea 8-228-NTR	7182	87.10.03	SAL	391.0	NPW	DH-ABD		391.0	None
Pembina Sandwich South 1-9-XII	7123	87.07.14	SAL	485.5	NPW	OS-ABD		485.5	9071
Cansalt DDH 1 Fighting Island	7134	87.04.28	SAL	462.4	STR	STR-ABD		462.4	Core
Cansalt DDH 2 Fighting Island	7135	87.05.09	SAL	313.0	STR	STR-ABD		313.0	Core
Cansalt DDH 87-3 Fighting Island	7143	87.05.16	SAL	289.0	STR	STR-ABD		289.0	9283-84
Subtotal				16752.9				16752.9	
HURON									
Owenbrook et al 1 Goderich 1-21-Bayfield	7179	87.10.20	SAL	598.0	NPW	DH-ABD		598.0	9297
Florentine et al 2 Stanley 2-18-X	7136	87.06.15	SAL	614.2	NPW	DH-ABD		614.2	9721
Florentine et al 1 Stanley 3-20-XI	7104	87.03.27	SAL	613.5	NPW	DH-ABD		613.5	9720
Subtotal				1825.7				1825.7	
KENT									
Thundervalley 1 Camden 8-1-II Gore	7105	87.02.28	SAL	573.0	NPW	OS-ABD		573.0	9602
Penway Wabash 1 Camden 2-7-1-XI Gore	7171	87.08.26	DEV	155.4	NPW	DH-ABD		155.4	7936
Penway Wabash 2 Camden 8-2-XII Gore	7184	87.09.16	DEV	129.2	NPW	DH-ABD		129.2	5528
J. Weston 1 Camden 2-1-9-II	7099	87.02.15	DEV	128.3	NPW	OS-ABD		128.3	2989
Francisco et al 6 Chatham 2-10-XIII	7103	87.03.28	SAL	564.8	DEV	DH-ABD		564.8	9637
Francisco et al 7 Chatham 5-10-XIII	7138	87.06.03	SAL	500.2	DEV	OP-GS	A-1 Carbonate	500.2	6734
Francisco et al 5 Chatham 7-11-XIV	7072	87.01.13	SAL	562.4	DEV	DH-ABD		562.4	9556
Francisco et al 8 Chatham 3-14-XI	7156	87.11.27	SAL	533.1	DEV	DH-ABD		533.1	6732
PPC 10 Dover 1-6-III East	7207	87.12.22	ORD	1176.0	NPW	GP	Verulam	1176.0	9292-93
Cons et al 34340 Romney 7-10-II	7203	87.12.06	ORD	1106.0	NPW	OP	Verulam	1106.0	9356-57

TABLE V-1: SUMMARY OF WELLS DRILLED IN 1987

Well Name	Permit Number	Completion Date	Target	Total Depth in Metres	Class	Results	Producing Formation	Metres Drilled	Sample Tray Number
KENT (Continued)									
Cons et al 34281 Romney 6-13-III	7155	87.07.30	ORD	1105.0	NPW	OPGS	Verulam	1105.0	9268-69
Ram 97 Tilbury East 3-23-IX	7161	87.08.04	ORD	1115.0	NPW	DH-ABD		1115.0	9218-19
Ram 94 Tilbury East 1-24-IX	7100	87.01.30	ORD	1115.0	NPW	OP-SUS	Verulam	1115.0	9174-75
Ram 96 Tilbury East 6-24-IX	7152	87.07.18	ORD	1115.4	NPW	OS-SUS		1115.4	9224-25
Bryant-Union Zone 4-4-11-VI	7147	87.06.11	DEV	191.4	BD	BD		79.1	362
Tunks Disposal 1 Zone 13-RR	7142	87.06.15	DEV	240.8	BD	BD-SUS		240.8	No Samp
Cornwall Creek 1 Zone 3-8-2-V	7148	87.06.22	DEV	137.2	DEV	DH-ABD		137.2	3112
Subtotal				10448.2				10335.9	
LAKE ERIE									
Consumers' 13905 Lake Erie 124-B	7126	87.05.04	SAL	353.0	DEV	GP	Guelph	353.0	204
Consumers' 13906 Lake Erie 124-G	7127	87.05.09	SAL	356.5	DEV	GS-ABD		356.5	6680
Place Lake Erie 19-E	7160	87.08.05	CLI	256.0	DEV	GS-ABD		256.0	4529
Consumers' 13910 Lake Erie 222-N	7131	87.04.26	SAL	518.0	DEV	GP	Guelph	518.0	6438
Place Lake Erie 47-E	7172	87.10.28	CLI	333.2	DEV	GP	Grimsby	333.2	6827
Teal Lake Erie 91-J-3	7153	87.10.05	CLI	453.2	DEV	GP	Thorold	453.2	7966
Teal S. Walsingham Lake Erie 91-J-3	7096	87.01.16	CLI	131.1	DEV	LH-ABD		131.1	None
Wigeon Lake Erie 91-H-2	7140	87.05.28	CLI	453.5	DEV	GP	Grimsby	453.5	7270
Subtotal				2854.4				2854.4	
LAMBTON									
Bowrio et al Brooke 5-12-VIII	7186	87.10.27	SAL	605.0	NPW	OS-ABD		605.0	9937
Brett Dawn 1-7-18-XIII	7154	87.07.13	DEV	183.0	BD	BD		65.0	6681
Union Dawn 259 Dawn 19-I	7057	87.02.25	SAL	548.0	NGS	NGS	Guelph	548.0	9960
Union Dawn 260 Dawn 19-I	7116	87.06.10	SAL	545.0	NGS	NGS	Guelph	545.0	8247
Union Dawn 262 Dawn 19-I	7118	87.06.22	SAL	545.0	NGS	NGS	Guelph	545.0	9180
Union Dawn 263 Dawn 19-I	7119	87.07.06	SAL	545.5	NGS	NGS	Guelph	545.5	9151
Union Dawn 261 Dawn 19-I	7117	87.06.11	SAL	545.0	NGS	NGS	Guelph	545.0	9965
Forbes 44 Dawn 4-23-I	7173	87.09.11	SAL	602.0	DEV	OP-GS	Guelph	602.0	9247
Forbes #19 Dawn 8-27-II	7177	87.10.30	SAL	610.5	NPW	OS-ABD		0.9	
Bryant-Union et al Dawn 4-29-II	7101	87.03.09	SAL	599.0	DEV	OP-GS	Guelph	599.0	9701
P-R & Assoc. 3 Dawn 3-30-III	7150	87.07.28	SAL	615.0	NPW	DH-ABD		615.0	9191
Philon Dawn 1-31-XIV	7189	87.10.20	SAL	524.0	DEV	GSOS-ABD		524.0	9075
Ram 95 Dawn 2-32-VIII	7098	87.03.30	SAL	562.4	DEV	OP-GP	Guelph	562.4	9686
Highridge Raen Enniskillen 8-10-I	7114	87.04.22	SAL	623.0	NPW	GS-ABD		623.0	9680
P-R & Leo 85 #2 Enniskillen 2-7-13-I	7144	87.07.30	DEV	135.3	NPW	OS-ABD		135.3	8112
Philon Enniskillen 5-14-VIII	7193	87.12.01	SAL	664.0	NPW	OS-ABD		664.0	9198
Bender 17A Disposal Enniskillen 3-14-IX	6993A	87.01.03	DEV	184.4	BD	BD		184.4	5639
Highridge Corey Enniskillen 1-6-VI	7151	87.08.01	SAL	688.8	NPW	GS-ABD		688.8	6511
Union Waubuno No. 2 Moore 10-II	7059	87.03.10	SAL	624.5	NGS	NGS	Guelph	624.5	9189-90
Penway et al Moore 6-12-XII	7169	87.09.24	SAL	784.0	NPW	DH-ABD		784.0	9183-84
Bryant-Union Moore 4-8-22-VII	7198	87.12.04	DEV	157.0	DEV	OP-GS	Dundee	157.0	7938
Ram 98 Moore 6-23-V	7183	87.09.17	SAL	799.0	NPW	DH-ABD		799.0	9358-59
Dow #77 Moore 23-XI	7033	87.02.27	SAL	749.0	SM	SM	A-2 Salt	749.0	6188

TABLE V-1: SUMMARY OF WELLS DRILLED IN 1987

Well Name	Permit Number	Completion Date	Target	Total Depth in Metres	Class	Results	Producing Formation	Metres Drilled	Sample Tray Number
LAMBTON (Continued)									
Dow #79 Moore 23-XI	7035	87.02.15	SAL	749.0	SM	SM	A-2 Salt	749.0	9591
Dow #73 Moore 23-XI	7032	87.03.08	SAL	749.0	SM	SM	A-2 Salt	749.0	9690
Dow #78 Moore 23-XI	7034	87.02.02	SAL	751.0	SM	SM	A-2 Salt	751.0	9582
Petrosar FB-9131 (W-6) Moore 1-23-IX	7141	87.08.08	SAL	656.0	LPG	LPG	B-Salt	495.0	7991
Bowrio et al Moore 5-4-VII	7196	87.12.15	SAL	593.1	NPW	GSOS-ABD		593.1	9248
Shell Cavern 2A Moore 67 Front	7145	87.07.04	SAL	749.0	LPG	LPG	A-2 Salt	749.0	9234
Union Waubuno No. 1 Moore 9-II	7058	87.03.04	SAL	624.0	NGS	NGS	Guelph	624.0	9201-02
ECC Cavern 4041A Sarnia 11-Range IV	7202	87.12.03	SAL	806.7	LPG	LPG	B-Salt	782.8	9249
EPC Cavern C-4043A Sarnia 11-Range IV	7124	87.04.27	SAL	653.0	LPG	LPG	B-Salt	653.0	7569
MOE Deep Obs. 1 Sarnia 12-Range IV	7188	87.09.29	DEV	303.0	OBS	OBS		303.0	9505-06
ECC Cavern 4042A Sarnia 12-Range IV	7174	87.08.30	SAL	703.0	LPG	LPG	B-Salt	703.0	7983
Hadley-Midway Sombra 6-11-XII	7194	87.12.17	SAL	679.1	NPW	GS-ABD		679.1	7194
Union Bickford No. 35 Sombra 6-XII	7020	87.04.07	SAL	653.0	NGS	NGS	Guelph	653.0	9181-82
Union Bickford 36 Sombra 7-XI	7121	87.09.09	SAL	640.0	OBS	OBS		640.0	9195
W.H.R. #1 Warwick 2-1-25-VI SER	7076	87.01.28	DEV	134.1	DEV	OS-SUS		134.1	1964
Chatham Res 5 Warwick 4-2-26-VI SER	7093	87.01.17	DEV	132.6	DEV	OP-GS	Dundee	132.6	2152
Chatham Res 6 Warwick 3-2-26-VI SER	7083	87.11.06	DEV	234.7	DEV	GS-OS-BD		234.7	7114
Chatham Res 8 Warwick 3-6-26-VI SER	7085	87.02.13	DEV	32.6	DEV	LH-ABD		32.6	No Samp
Chatham Res 8A Warwick 3-6-26-VI SER	7085A	87.02.18	DEV	138.1	DEV	OP-GS	Dundee	138.1	2152
Chatham Res 9 Warwick 1-7-26-VI SER	7086	87.02.21	DEV	131.9	DEV	OP-GS	Dundee	131.9	7113
Chatham Res 7 Warwick 1-6-26-VI SER	7092	87.02.10	DEV	135.0	DEV	OP-GS	Dundee	135.0	7113
Vireo Warwick 2-3-28-IV SER	7110	87.04.11	DEV	182.9	BD	BD		182.9	7572
Subtotal				22869.2				21956.7	
MANITOULIN									
TLX Lee No. 2 Sandfield 4-8-V	7108	87.04.03	ORD	252.6	NPW	DH-BP		252.6	7139
Subtotal				252.6				252.6	
MIDDLESEX									
Forbes 43 McGillivray 4-5-XIX	7113	87.04.15	SAL	567.0	NPW	DH-ABD		567.0	9725
Smith 1 Metcalfe 4-4-3-VI	7149	87.07.02	DEV	143.3	NPW	DH-ABD		143.3	7823
Subtotal				710.3				710.3	
NORFOLK									
Bayview 15 Charlotteville 1-3-VII	7167	87.10.01	CLI	371.8	DEV	GP	Thorold,Grimsby	371.8	
Metalore 75 Charlotteville 6-4-VII	7050	87.01.16	CLI	408.7	DEV	GP	Thorold	408.7	6738
Hemlock 11 Houghton 4-3-ENR	7122	87.08.25	CLI	446.5	DEV	GP	Thorold	446.5	9792
F & M 13 North Walsingham 8-13-VII	7137	87.05.28	CLI	402.3	NPW	GP	Thorold,Grimsby	402.3	9818
F & M 12 North Walsingham 8-18-VII	7107	87.02.02	CLI	427.0	DEV	GS-ABD		427.0	4234
Subtotal				2056.3				2056.3	
OXFORD									
Riley/Northquest Blandford 5-7-VIII	7095	87.08.21	CAM	882.4	NPW	GP	Cambrian	882.4	9196-97
Brett Gobles #58 Blenheim 6-20-I	7163	87.09.17	CAM	894.6	DEV	DH-ABD		894.6	9192-93
Subtotal				1777.0				1777.0	

TABLE V-1: SUMMARY OF WELLS DRILLED IN 1987

Well Name	Permit Number	Completion Date	Target	Total Depth in Metres	Class	Results	Producing Formation	Metres Drilled	Sample Tray Number
WENTWORTH									
Donald 1 Binbrook 3-25-VII	7180	87.11.19	CLI	146.6	NPW	GP	Whirlpool	146.6	7931
Maras 1 Glanford 1-11-VII	7111	87.03.25	CLI	153.9	NPW	GP	Whirlpool	153.9	4633
Subtotal				300.5				300.5	
TOTAL	**61084.4**				**58870.9**				

CTY Elgin TWP Aldborough BLK TRAC 4 LOT A CON VIII

WELL NAME Aralail No. 10, Aldborough 4-8-VIII PERMIT 7170 DAT CLASS DFT

OPERATOR Caiswinkler Enterprises Limited TARGET CAM CUR STATUS DP

DRILLING DATA

CONTRACTOR Charles Rose

RIG TYPE Cable DEPTHS

CABLE TOP 1188.7 KB ELEV 215.2

BOT 1237.2 LOGGER 1234.1

ROTARY TOP DRILLER 1237.2

BOT DEEP END

DRLG FLD PLUG BK 1193.0

DATES

PERMIT 1987-08-10

SPUD 1987-09-21

COMPTD 1987-11-02

OFFCMP

WRKOVR

ABNDND

COORDINATES

NORTH		m	
SOUTH	477.0	m	
EAST		m	
WEST	179.8	m	

LAT 42-31-48

LONG 81-43-52

SAMPLES

TOP	87
BOT	1243.0
TRAY	5832-
	5833

INITIAL GAS RECORD

INTERVAL	FLOW	SIP
1179.0 – 1183.0		
–		
–		
–		
–		
–		

CASING AND TUBING RECORD

DIAM	WEIGHT	SET AT	HOW SET	RECOV
339.7	71.4	88.4	SWD	0
114.3	14.1	1185.3	CEM	0

COMPLETION DATA

GAS	10³m³/d
OIL	m³/d
SIP	kPa
FORM	Gull River
INTVAL	1180-1183.7 m
	m
	m
PERF ☒	OPEN HOLE ☐

INITIAL OIL RECORD

INTERVAL	FLOW	DENSITY
1179.0 – 1183.0		
–		
–		
–		
–		
–		

LOGGING RECORD

INTERVAL	TYPE	COMPANY
883.9 – 1234.1	GRVL	Computalog
1107.6 – 1185.1	DBHL	Great Guns
–		
–		
–		
–		
–		

REMARKS

Reopening of existing well – permit 5113. No discovery made – well plugged back to original producing zone

INITIAL WATER RECORD

INTERVAL	STAT LEV	TYPE
76.0 –		FRE
196.6 –	75.0	SUL
609.6 –	75.0	SAL
1232.6 –	950.0	SAL
–		
–		

CORING RECORD

INTERVAL	LOCATION	MD	MIN
–			
–			
–			
–			

A-2 Shale at 496.5

GEOLOGICAL CONTACTS

	TOP	ELEV	THICK
KB / SAMPLE DEPTH	0.0		
DRIFT / BEDROCK SUBSEA	1.2		
PORT LAMBTON			
KETTLE POINT			
HAMILTON	116.0		
MARCELLUS			
DUNDEE	132.0		
COLUMBUS			
LUCAS	179.0		
AMHERSTBURG	211.0		
SYLVANIA			
BOIS BLANC	250.0		
SPRINGVALE			
ORISKANY			
BASS ISLANDS	259.0		
G SHALE	303.5		
F SHALE	309.0		
F SALT			
E CARBONATE	426.0		
D SALT/EQUIVALENT			
C SHALE	444.5		
B MARKER	456.0		
B EQUIVALENT	460.0		
B SALT			
B ANHYDRITE			
A2 CARBONATE			
A2 SALT			
A1 ANHYDRITE			
A1 CARBONATE	503.0		
A1 SALT			
A1 ANHYDRITE			
GUELPH	520.0		
ERAMOSA			
GOAT ISLAND	552.0		
GASPORT/MANITOU	592.0		
DECEW			
ROCHESTER	606.0		
IRONDEQUOIT			
REYNALES/FOSSIL HILL			
THOROLD			
GRIMSBY	610.0		
CABOT HEAD	619.0		
MANITOULIN	645.0		
WHIRLPOOL			
QUEENSTON	659.0		
BLUE MOUNTAIN - GEORG BAY	768.0		
COLLINGWOOD	917.0		
COBOURG	958.9		
VERULAM	982.4		
KIRKFIELD	1054.6		
COBOCONK	1096.7		
GULL RIVER	1122.9		
SHADOW LAKE	1220.6		
CAMBRIAN	1221.6		
PRECAMBRIAN			

GEOLOGY BY T.R. Carter

CTY Essex TWP Anderdon BLK TRAC 2 LOT 11 CON V

WELL NAME Pembina Manus Anderdon 2-11-V PERMIT 7191

OPERATOR Pembina Exploration Limited TARGET ORD DAT CLASS RTV

CUR STATUS GS-ABD

DRILLING DATA

CONTRACTOR Underwater Gas Developers Limited

RIG TYPE Rotary DEPTHS

CABLE TOP KB ELEV 185.0

BOT LOGGER 1119.0

ROTARY TOP 4.8 DRILLER 1119.0

BOT 1119.0 DEEP END

DRLG FLD PLUG BK

DATES

PERMIT 1987-10-05

SPUD 1987-10-20

COMPTD 1987-11-13

OFFCMP 1988-11-13

WRKOVR

ABNDND 1988-01-03

COORDINATES

NORTH		m	
SOUTH	179.2	m	
EAST		m	
WEST		m	

LAT 42-10-03

LONG 83-01-09

SAMPLES

TOP	69
BOT	1119
TRAY	9356-
	9355

INITIAL GAS RECORD

INTERVAL	FLOW	SIP
256.0 – 259.0	123.16	2482
–		
–		
–		
–		
–		

CASING AND TUBING RECORD

DIAM	WEIGHT	SET AT	HOW SET	RECOV
340	81.2	67.5	CEM	0
244	52.0	241.2	CEM	0
178	29.8	751.0	CEM	0

COMPLETION DATA

GAS	123.16 10³m³/d
OIL	m³/d
SIP	2482 kPa
FORM	P-Unit
INTVAL	256.0-259.0 m
	m
	m
PERF ☐	OPEN HOLE ☐

INITIAL OIL RECORD

INTERVAL	FLOW	DENSITY
–		
–		
–		
–		
–		
–		

LOGGING RECORD

INTERVAL	TYPE	COMPANY
30.0 – 1118.2	CBHD	BCB
15.0 – 1114.0	CBL	"
241.2 – 1115.0	LATL	"
241.2 – 1115.0	NEPL	"
–		
–		
–		

REMARKS

Water analysis

A-2 Shale at 402.2

Precambrian is very biotite-rich

INITIAL WATER RECORD

INTERVAL	STAT LEV	TYPE
73.0 –		SUL
92.0 –		SUL
990.0 –		SAL
1012.0 –		SAL
–		
–		

CORING RECORD

INTERVAL	LOCATION	MD	MIN
–			
–			
–			
–			

GEOLOGICAL CONTACTS

	TOP	ELEV	THICK
KB / SAMPLE DEPTH	0.0		
DRIFT / BEDROCK SUBSEA	4.8		
PORT LAMBTON			
KETTLE POINT			
HAMILTON			
MARCELLUS			
DUNDEE			
COLUMBUS			
LUCAS	20.5		
AMHERSTBURG	67.2		
SYLVANIA	93.4		
BOIS BLANC	126.0		
SPRINGVALE			
ORISKANY			
BASS ISLANDS	150.0		
G SHALE	211.7		
F SHALE	223.1		
F SALT			
E CARBONATE	261.0		
D SALT/EQUIVALENT			
C SHALE	293.3		
B MARKER	314.0		
B EQUIVALENT	321.0		
B SALT	336.0		
B ANHYDRITE	372.5		
A2 CARBONATE	374.3		
A2 SALT			
A2 ANHYDRITE	403.0		
A1 CARBONATE	408.0		
A1 SALT			
A1 ANHYDRITE			
GUELPH	418.0		
ERAMOSA			
GOAT ISLAND	465.0		
GASPORT/MANITOU	479.3		
DECEW			
ROCHESTER	519.1		
IRONDEQUOIT			
REYNALES/FOSSIL HILL	523.1		
THOROLD			
GRIMSBY			
CABOT HEAD	526.2		
MANITOULIN	559.0		
WHIRLPOOL			
QUEENSTON	568.5		
BLUE MOUNTAIN - GEORG BAY	646.1		
COLLINGWOOD			
COBOURG	752.0		
VERULAM	768.7		
KIRKFIELD	817.3		
COBOCONK	864.3		
GULL RIVER	892.5		
SHADOW LAKE	1006.5		
CAMBRIAN	1008.9		
PRECAMBRIAN	1101.5		

GEOLOGY BY T.R. Carter

T.R. Carter

CTY Essex TWP Anderdon BLK TRAC 8 LOT 11 CON VI

WELL NAME Pembina Dia-Shaw, Anderdon 8-11-VI PERMIT 7115 INIT CLASS NEW

OPERATOR Pembina Exploration Ltd TARGET ORD CUR STATUS CO-ABD

DRILLING DATA

CONTRACTOR Underwater Gas Developers
RIG TYPE Rotary
CABLE TOP — DEPTHS
BOT — KB ELEV 183.4
ROTRY TOP 3.0 — LOGGER
BOT 302.5 — DRILLER 302.5
DRLG FLD — DEEP END
PLUG BK

DATES

PERMIT 1987-03-27
SPUD 1987-05-21
COMPTD 1987-05-26
OFFCAP 1988-05-26
WRKOVR
ABNDND 1988-05-29

COORDINATES

NORTH 150.0 m
SOUTH m
EAST 180.0 m
WEST m
LAT 42-09-54
LONG 83-00-57

SAMPLES

TOP 3
BOT 302.5
TRAV 6703

INITIAL GAS RECORD

INTERVAL	FLOW	SIP
256 –		
289 –		3700
–		
–		
–		
–		

CASING AND TUBING RECORD

DIAM	WEIGHT	SET AT	HOW SET	RECOV
244	34	62.0	CEM	

COMPLETION DATA

GAS 10³m³/d
OIL m³/d
SIP kPa
FORM
INTVL m
m
m

INITIAL OIL RECORD

INTERVAL	FLOW	DENSITY
–		
–		
–		
–		
–		

LOGGING RECORD

INTERVAL	TYPE	COMPANY
–		
–		
–		
–		
–		
–		

PERF ☐ OPEN HOLE ☐

REMARKS

INITIAL WATER RECORD

INTERVAL	STAT LEV	TYPE
21 –		FRE
71 –		SUL
85 –		SUL
175.5 –		SUL
254 – 256	0	SUL
–		

CORING RECORD

INTERVAL	LOCATION	NO	mm
–			
–			
–			
–			
–			
–			

GEOLOGICAL CONTACTS	TOP	ELEV	THICK
KB - DRILLERS	0.0		
DRIFT / BEDROCK	3.0		
DEVONIAN: PORT LAMBTON			
KETTLE POINT			
HAMILTON			
MARCELLUS			
DUNDEE			
COLUMBUS	21.3		
LUCAS	25.0		
AMHERSTBURG	72.0		
SYLVANIA	101.0		
BOIS BLANC	142.0		
SPRINGVALE			
ORISKANY			
SILURIAN: BASS ISLANDS	170.0		
G SHALE	222.0		
F SHALE	228.5		
F SALT			
E CARBONATE	269.0		
D SALT/EQUIVALENT			
C SHALE			
B MARKER			
B EQUIVALENT			
B SALT			
B ANHYDRITE			
A2 CARBONATE			
A2 SALT			
A2 ANHYDRITE			
A1 CARBONATE			
A1 SALT			
A1 ANHYDRITE			
GUELPH			
ERAMOSA			
GOAT ISLAND			
GASPORT/MANITOU			
DECEW			
ROCHESTER			
IRONDEQUOIT			
REYNALES/FOSSIL HILL			
THOROLD			
GRIMSBY			
CABOT HEAD			
MANITOULIN			
WHIRLPOOL			
ORDOVICIAN: QUEENSTON			
BLUE MOUNTAIN - GEORG. BAY			
COLLINGWOOD			
COBOURG			
VERULAM			
KIRKFIELD			
COBOCONK			
GULL RIVER			
SHADOW LAKE			
CAMBRIAN			
PRECAMBRIAN			

GEOLOGY BY T.R. Carter

CTY Essex TWP Anderdon BLK TRAC 8 LOT 11 CON VI

WELL NAME Pembina Dia-Shaw, Anderdon AA-11-VI PERMIT 7115A INIT CLASS NEW

OPERATOR Pembina Exploration Ltd TARGET ORD CUR STATUS CO-ABD

DRILLING DATA

CONTRACTOR Underwater Gas Developers
RIG TYPE Rotary
CABLE TOP — DEPTHS
BOT — KB ELEV 185.2
ROTRY TOP 4.8 — LOGGER
BOT 1125.0 — DRILLER 1125.0
DRLG FLD — DEEP END
PLUG BK 614.0

DATES

PERMIT 1987-03-27
SPUD 1987-06-17
COMPTD 1987-07-12
OFFCAP 1988-07-12
WRKOVR 1987-08-25
ABNDND 1990-01-16

COORDINATES

NORTH 151.2 m
SOUTH m
EAST 175.4 m
WEST m
LAT 42-09-54
LONG 83-00-57

SAMPLES

TOP 3
BOT 1125
TRAV 9187-9188

INITIAL GAS RECORD

INTERVAL	FLOW	SIP
255.0 – 265.0		
280.0 – 281.0	61.3	
273.0 – 290.0	11.6	2569
280.0 – 282.0	32.2	2569
–		
–		

CASING AND TUBING RECORD

DIAM	WEIGHT	SET AT	HOW SET	RECOV
349	107	63.2	CEM	
244	34	222.0	CEM	
178	30	756.0	CEM	
60	7	267.1	BAP	

COMPLETION DATA

GAS 32.16 10³m³/d
OIL m³/d
SIP 2569 kPa
FORM
INTVL 280.0–282.0 m
m
m

INITIAL OIL RECORD

INTERVAL	FLOW	DENSITY
–		
–		
–		
–		
–		
–		

LOGGING RECORD

INTERVAL	TYPE	COMPANY
65.0 – 968.4	CBL	"
65.0 – 968.4	SONL	"
43.0 – 459.0	CNTD	"
767.0 – 809.5	CNTD	"
–		
–		

PERF ☒ OPEN HOLE ☐

REMARKS
A-2 Shale at 412.1
Poor samples

INITIAL WATER RECORD

INTERVAL	STAT LEV	TYPE
70.0 –	–	SAL
184.0 –	–	SAL
384.0 – 400.0	105.0	SAL
432.0 – 537.0	–	SAL
–		
–		

CORING RECORD

INTERVAL	LOCATION	NO	mm
–			
–			
–			
–			
–			
–			

GEOLOGICAL CONTACTS	TOP	ELEV	THICK
KB - LAKE USUAL	0.0		
DRIFT / LAKE WATER	4.8		
DEVONIAN: PORT LAMBTON			
KETTLE POINT			
HAMILTON			
MARCELLUS			
DUNDEE			
COLUMBUS	20.4		
LUCAS	24.6		
AMHERSTBURG	75.0		
SYLVANIA	99.0		
BOIS BLANC	136.5		
SPRINGVALE			
ORISKANY			
SILURIAN: BASS ISLANDS	167.0		
G SHALE	222.6		
F SHALE	228.6		
F SALT			
E CARBONATE	271.7		
D SALT/EQUIVALENT	297.8		
C SHALE	303.0		
B MARKER	323.7		
B EQUIVALENT	332.3		
B SALT	339.2		
B ANHYDRITE			
A2 CARBONATE	382.1		
A2 SALT			
A2 ANHYDRITE	413.2		
A1 CARBONATE	419.5		
A1 SALT			
A1 ANHYDRITE			
GUELPH	632.2		
ERAMOSA			
GOAT ISLAND	658.0		
GASPORT/MANITOU	692.0		
DECEW			
ROCHESTER	537.5		
IRONDEQUOIT			
REYNALES/FOSSIL HILL	541.6		
THOROLD			
GRIMSBY			
CABOT HEAD	563.8		
MANITOULIN	575.0		
WHIRLPOOL			
ORDOVICIAN: QUEENSTON	585.1		
BLUE MOUNTAIN - GEORG. BAY	667.2		
COLLINGWOOD	755.7		
COBOURG	768.5		
VERULAM	785.3		
KIRKFIELD	843.6		
COBOCONK	908.5		
GULL RIVER	930.8		
SHADOW LAKE			
CAMBRIAN	997.0		
PRECAMBRIAN	1090.0		

GEOLOGY BY T.R. Carter

CTY Essex TWP Anderdon BLK TRAC LOT 33 CON I

WELL NAME Brine Well D-1 Anderdon 33-I PERMIT 7157 WAT CLASS SW

OPERATOR General Chemical Canada Ltd TARGET Sal CUR STATUS SW

DRILLING DATA

CONTRACTOR Eagle Drilling Services Ltd

RIG TYPE DEPTHS

CABLE TOP KB ELEV 178.2

BOT LOWDEN 371.2

ROTRY TOP 2.1 DRILLER 371.9

BOT 371.9 DEEP END

DRLG FLD PLUG BK

DATES

PERMIT 1987-07-20

SPUD 1987-10-26

COMPTD 1987-11-02

OFFCAP 1987-12-01

WWDAB 1989-05-02

ABNDND

COORDINATES

NORTH 4.3 m

SOUTH m

EAST m

WEST 716.3 m

LAT 42-10-10

LONG 82-05-35

SAMPLES

TOP 42.7

BOT 310.9

TRAV 7963

INITIAL GAS RECORD

INTERVAL	FLOW	SIP
–		
–		
–		
–		
–		
–		

CASING AND TUBING RECORD

DIAM	WEIGHT	SET AT	HOW SET	RECOV
273	90.3	27.3	CEM	0
178	29.8	310.1	CEM	0
140	23.1	360.1	BAD	0

COMPLETION DATA

GAS 10^3m3/d

OIL m3/d

SIP kPa

FORM B Salt

INTVAL m

m

m

PERF ☐ OPEN HOLE ☒

REMARKS

Poor samples

INITIAL OIL RECORD

INTERVAL	FLOW	DENSITY
–		
–		
–		
–		
–		
–		

LOGGING RECORD

INTERVAL	TYPE	COMPANY
0 – 371.9	GRL	Computalog
307.8 – 371.9	DENL	"
0 – 371.9	REST	"
291.1 – 362.4	CALP	"
–		
–		
–		

INITIAL WATER RECORD

INTERVAL	STAT LEV	TYPE
–		
–		
–		
–		
–		
–		

CORING RECORD

INTERVAL	LOCATION	NO	LNG
–			
–			
–			
–			
–			
–			

GEOLOGICAL CONTACTS	TOP	ELEV	THICK
KB [illegible]	0.0		
DRFT / [illegible]	2.1		
PORT LAMBTON			
KETTLE POINT			
HAMILTON			
MARCELLUS			
DUNDEE			
COLUMBUS			
LUCAS	36.2		
AMHERSTBURG	48.5		
SYLVANIA	67.1		
BOIS BLANC	97.6		
SPRINGVALE			
ORISKANY			
BASS ISLANDS	131.1		
G SHALE	189.1		
F SHALE	195.1		
F SALT			
E CARBONATE	260.2		
D SALT/EQUIVALENT			
C SHALE	271.9		
B ANHYDR	292.6		
B EQUIVALENT	298.7		
B SALT	306.3		
B ANHYDRITE			
A2 CARBONATE	344.4		
A2 SALT			

A2 ANHYDRITE			
A1 CARBONATE			
A1 SALT			
A1 ANHYDRITE			
GUELPH			
SYMMES			
GOAT ISLAND			
GASPORT/MANITOU			
DECEW			
ROCHESTER			
IRONDEQUOIT			
REYNALES/FOSSIL HILL			
THOROLD			
GRIMSBY			
CABOT HEAD			
MANITOULIN			
WHIRLPOOL			
QUEENSTON			
BLUE MOUNTAIN (GEORG. BAY			
COLLINGWOOD			
COBOURG			
VERULAM			
KIRKFIELD			
COBOCONK			
GULL RIVER			
SHADOW LAKE			
CAMBRIAN			
PRECAMBRIAN			

GEOLOGIST T.R. Carter

CTY Essex TWP Anderdon BLK TRAC LOT 33 CON I

WELL NAME Brine Well D-8, Anderdon 33-I PERMIT 7150 WAT CLASS SW

OPERATOR General Chemical Canada Ltd TARGET Sal CUR STATUS SW

DRILLING DATA

CONTRACTOR Eagle Drilling Services Ltd

RIG TYPE Rotary DEPTHS

CABLE TOP KB ELEV 178.3

BOT LOWDEN 372.5

ROTRY TOP 2.4 DRILLER 372.5

BOT 372.5 DEEP END

DRLG FLD PLUG BK

DATES

PERMIT 1987-07-20

SPUD 1987-10-09

COMPTD 1987-10-20

OFFCAP 1987-11-19

WWDAB 1989-05-02

ABNDND

COORDINATES

NORTH 4.3 m

SOUTH m

EAST m

WEST 807.7 m

LAT 42-10-10

LONG 83-05-39

SAMPLES

TOP 54.9

BOT 304.8

TRAV 7963

INITIAL GAS RECORD

INTERVAL	FLOW	SIP
–		
–		
–		
–		
–		
–		

CASING AND TUBING RECORD

DIAM	WEIGHT	SET AT	HOW SET	RECOV
273	60.3	34.7	CEM	0
178	29.8	310.0	CEM	0
140	20.8	362.7	PAC	0

COMPLETION DATA

GAS 10^3m3/d

OIL m3/d

SIP kPa

FORM B Salt

INTVAL m

m

m

PERF ☐ OPEN HOLE ☒

REMARKS

INITIAL OIL RECORD

INTERVAL	FLOW	DENSITY
–		
–		
–		
–		
–		
–		

LOGGING RECORD

INTERVAL	TYPE	COMPANY
0 – 372.5	GRL	Computalog
307.8 – 372.5	DENL	"
–		
–		
–		
–		
–		

INITIAL WATER RECORD

INTERVAL	STAT LEV	TYPE
115.8 – 121.9		
146.3 – 152.4		
–		
–		
–		
–		

CORING RECORD

INTERVAL	LOCATION	NO	LNG
–			
–			
–			
–			
–			
–			

GEOLOGICAL CONTACTS	TOP	ELEV	THICK
KB [illegible]	0.0		
DRFT / [illegible]	2.4		
PORT LAMBTON			
KETTLE POINT			
HAMILTON			
MARCELLUS			
DUNDEE			
COLUMBUS			
LUCAS	38.9		
AMHERSTBURG	?		
SYLVANIA	67.5		
BOIS BLANC	103.7		
SPRINGVALE			
ORISKANY			
BASS ISLANDS	136.1		
G SHALE	199.2		
F SHALE	199.9		
F SALT			
E CARBONATE	261.6		
D SALT/EQUIVALENT			
C SHALE	273.1		
B ANHYDR	293.3		
B EQUIVALENT	299.6		
B SALT	310.3		
B ANHYDRITE			
A2 CARBONATE	344.7		
A2 SALT			

A2 ANHYDRITE			
A1 CARBONATE			
A1 SALT			
A1 ANHYDRITE			
GUELPH			
SYMMES			
GOAT ISLAND			
GASPORT/MANITOU			
DECEW			
ROCHESTER			
IRONDEQUOIT			
REYNALES/FOSSIL HILL			
THOROLD			
GRIMSBY			
CABOT HEAD			
MANITOULIN			
WHIRLPOOL			
QUEENSTON			
BLUE MOUNTAIN (GEORG. BAY			
COLLINGWOOD			
COBOURG			
VERULAM			
KIRKFIELD			
COBOCONK			
GULL RIVER			
SHADOW LAKE			
CAMBRIAN			
PRECAMBRIAN			

GEOLOGIST T.R. Carter

T.R. Carter

CTY Essex TWP Colchester North BLK TRAC 1 LOT 34 CON SHR
WELL NAME Cons 34211 Colchester North 1-34-SHR PERMIT 7106 INIT CLASS NPW
OPERATOR The Consumers Gas Co. Ltd TARGET ORD CUR STATUS DH-ABD

DRILLING DATA
CONTRACTOR Underwater Gas Developers Ltd
RIG TYPE Rotary DEPTHS
CABLE TOP KB ELEV 197.1
BOT LOGGER 1075.0
ROTRY TOP 3.0 DRILLER 1076.0
BOT 1074.0 DEEP END
DRLG FLD PLUG BK

DATES
PERMIT 1987-01-26
SPUD 1987-02-03
COMPTD 1987-02-10
OFFCNF 1988-02-10
WRKOVR
ABNDND 1987-02-12

COORDINATES
NORTH m
SOUTH 107.0 m
EAST 142.0 m
WEST m
LAT 42-09-02
LONG 82-48-59

SAMPLES
TOP 65
BOT 1074
TRAY 9185-9186

INITIAL GAS RECORD

INTERVAL	FLOW	SIP
–		
–		
–		
–		
–		
–		

CASING AND TUBING RECORD

DIAM	WEIGHT	SET AT	HOW SET	RECOV
244	56	62.4	CEM	0
178	29.8	518.0	CEM	97

COMPLETION DATA
GAS 10³m³/d
OIL m³/d
SIP kPa
FORM
INTRVL m
m
m
PERF ☐ OPEN HOLE ☐

INITIAL OIL RECORD

INTERVAL	FLOW	DENSITY
–		
–		
–		
–		
–		
–		

LOGGING RECORD

INTERVAL	TYPE	COMPANY
3.0 – 1074.5	GRL	SCH
63.0 – 1074.5	CNFD	"
63.0 – 1074.5	LATL	"
63.0 – 1074.5	MSFL	"
–		
–		
–		

REMARKS

INITIAL WATER RECORD

INTERVAL	STAT LEV	TYPE
66 –		FRE
169 –		SUL
400 –		SUL
1026 – 1060		SAL
–		
–		

CORING RECORD

INTERVAL	LOCATION	NO	mm
–			
–			
–			
–			
–			
–			

GEOLOGICAL CONTACTS	TOP	ELEV	THICK
KB / [illegible]	0.0		
DRIFT / [illegible]	3.0		
DEVONIAN: PORT LAMBTON			
KETTLE POINT			
HAMILTON			
MARCELLUS			
DUNDEE	37.7		
COLUMBUS			
LUCAS	55.2		
AMHERSTBURG	93.0		
SYLVANIA			
BOIS BLANC	135.0		
SPRINGVALE			
ORISKANY			
SILURIAN: BASS ISLANDS	153.0		
G SHALE	226.1		
F SHALE	232.7		
F SALT			
E CARBONATE	275.2		
D SALT/EQUIVALENT	301.0		
C SHALE	307.0		
B MARKER	329.6		
B EQUIVALENT	335.4		
B SALT			
B ANHYDRITE	345.6		
A2 CARBONATE	353.1		
A2 SALT			
A2 ANHYDRITE	372.6		
A1 CARBONATE	380.9		
A1 SALT			
A1 ANHYDRITE			
GUELPH	391.9		
ERAMOSA			
GOAT ISLAND	427.1		
GASPORT/WARTON	466.5		
DECEW			
ROCHESTER	502.5		
IRONDEQUOIT			
REYNALES/FOSSIL HILL	507.0		
THOROLD			
GRIMSBY			
CABOT HEAD	510.1		
MANITOULIN	549.0		
WHIRLPOOL			
ORDOVICIAN: QUEENSTON	559.2		
BLUE MOUNTAIN GEORG BAY	639.0		
COLLINGWOOD			
COBOURG	758.0		
VERULAM	771.0		
KIRKFIELD	822.3		
COBOCONK	869.9		
GULL RIVER	911.0		
SHADOW LAKE	1014.0		
CAMBRIAN	1016.8		
PRECAMBRIAN	1055.5		

GEOLOGY BY T.R. Carter

CTY Essex TWP [illegible] South BLK TRAC 1 LOT 1 CON III
WELL NAME Cons-Paladin 34312 [illegible]eld S. 1-1-III PERMIT 7187 INIT CLASS NPW
OPERATOR The Consumers' Gas Company Ltd TARGET ORD CUR STATUS OSGS- ABD

DRILLING DATA
CONTRACTOR Underwater Gas Developers Limited
RIG TYPE Rotary DEPTHS
CABLE TOP KB ELEV 198.7
BOT LOGGER 1051.5
ROTRY TOP 4.7 DRILLER 1050.0
BOT 1050-0 DEEP END
DRLG FLD PLUG BK 1042.2

DATES
PERMIT 1987-09-10
SPUD 1987-10-05
COMPTD 1987-10-14
OFFCNF 1988-10-14
WRKOVR
ABNDND 1989-11-13

COORDINATES
NORTH m
SOUTH 157.0 m
EAST m
WEST 199.0 m
LAT 42-04-30
LONG 82-43-54

SAMPLES
TOP 3
BOT 1050
TRAY 9230-9231

INITIAL GAS RECORD

INTERVAL	FLOW	SIP
758 –		
760 –		
785.5 –		
–		
–		
–		

CASING AND TUBING RECORD

DIAM	WEIGHT	SET AT	HOW SET	RECOV
244	59.1	59.1	CEM	0
178	29.8	483.3	CEM	0
114	14.0	1042.2	CEM	0
60	7.0	764.5	HAN	

COMPLETION DATA
GAS 10³m³/d
OIL m³/d
SIP kPa
FORM Trenton
INTRVL 781.0-804.0 m
m
m
PERF ☒ OPEN HOLE ☐

INITIAL OIL RECORD

INTERVAL	FLOW	DENSITY
758 –		
762 –		
768 –		
785.5 –		
–		

LOGGING RECORD

INTERVAL	TYPE	COMPANY
12.0 – 1051	GRL	SCH
12.0 – 1051.0	CNFD	"
59.0 – 1051.0	LATL	"
59.0 – 1051.0	MSFL	"
725.0 – 1045.0	ELPR	"
12.0 – 1048.0	SONL	"
140.0 – 1024.0	CBND	"

REMARKS
A-2 Shale at 337.1
Poor samples in
Dundee, Lucas

INITIAL WATER RECORD

INTERVAL	STAT LEV	TYPE
79 –		SUL
353 –		SUL
786 –		SAL
–		
–		
–		

CORING RECORD

INTERVAL	LOCATION	NO	mm
–			
–			
–			
–			
–			
–			

GEOLOGICAL CONTACTS	TOP	ELEV	THICK
KB / [illegible]	0		
DRIFT / [illegible]	4.7		
DEVONIAN: PORT LAMBTON			
KETTLE POINT			
HAMILTON			
MARCELLUS			
DUNDEE	36.7		
COLUMBUS			
LUCAS	44.0		
AMHERSTBURG	72.5		
SYLVANIA	125.0		
BOIS BLANC	135.0		
SPRINGVALE			
ORISKANY			
SILURIAN: BASS ISLANDS	147.0		
G SHALE	197.0		
F SHALE	204.2		
F SALT			
E CARBONATE	245.5		
D SALT/EQUIVALENT			
C SHALE	274.0		
B MARKER	296.0		
B EQUIVALENT	302.0		
B SALT			
B ANHYDRITE	338.0		
A2 CARBONATE	343.2		
A2 SALT			
A2 ANHYDRITE	338.9		
A1 CARBONATE	344.9		
A1 SALT			
A1 ANHYDRITE			
GUELPH	353.1		
ERAMOSA			
GOAT ISLAND	377.7		
GASPORT/WARTON	415.4		
DECEW			
ROCHESTER	469.8		
IRONDEQUOIT			
REYNALES/FOSSIL HILL	473.7		
THOROLD			
GRIMSBY			
CABOT HEAD	478.1		
MANITOULIN	514.1		
WHIRLPOOL			
ORDOVICIAN: QUEENSTON	528.0		
BLUE MOUNTAIN - GEORG BAY	611.0		
COLLINGWOOD			
COBOURG	744.0		
VERULAM	763.0		
KIRKFIELD	804.6		
COBOCONK	846.3		
GULL RIVER	878.1		
SHADOW LAKE	979.5		
CAMBRIAN	981.2		
PRECAMBRIAN	1035.5		

GEOLOGY BY T.R. Carter

CTY Essex TWP Gosfield South BLK TRAC 8 LOT 7 CON V

WELL NAME Consumers 34210 Gosfield S. 8-7-V PERMIT 7102 INIT CLASS NPW

OPERATOR The Consumers Gas Co. Ltd. TARGET ORD CUR STATUS OP

DRILLING DATA

CONTRACTOR Underwater Gas Developers Ltd
RIG TYPE Rotary
CABLE TOP
BOT
ROTRY TOP 3.0
BOT 1048.0
DRLG FLD

DEPTHS
KB ELEV 197.6
LOGGER 1047.0
DRILLER 1048.0
DEEP END
PLUG BK

DATES

PERMIT 1987-01-15
SPUD 1987-01-20
COMPTD 1987-01-30
OFFCNF 1988-01-30
WRKOVR
ABNDND

COORDINATES

NORTH 121.6 m
SOUTH m
EAST m
WEST 193.6 m
LAT 42-05-30
LONG 82-46-12

SAMPLES

TOP 0
BOT 1047
TRAV 9178-9179

INITIAL GAS RECORD

INTERVAL	FLOW	SIP
770 – 800	0.71 $10^3m^3/d$	
–		
–		
–		
–		
–		

CASING AND TUBING RECORD

DIAM	WEIGHT	SET AT	HOW SET	RECOV
244	54	50.8	CEM	0
178	29.8	486.3	CEM	0
114	14	1040.1	CEM	0

COMPLETION DATA

GAS $10^3m^3/d$
OIL m^3/d
SIP MPa
FORM
INTRVL m
m
m

INITIAL OIL RECORD

INTERVAL	FLOW	DENSITY
775 –	Show	
793 –	Show	
819 – 825	Show	
–		
–		

LOGGING RECORD

INTERVAL	TYPE	COMPANY
0 – 1046.0	GRL	SCH
50.0 – 1046.0	CRL	"
–		
53.0 – 1046.0	LATL	"
53.0 – 1046.0	MSFL	"
700.0 – 1046.0	ELPR	"
0 – 1047.0	SONL	"

PERF ☐ OPEN HOLE ☐

REMARKS

Oil Analysis

INITIAL WATER RECORD

INTERVAL	STAT LEV	TYPE
190 –		SUL
362 –		SUL
858 –		SAL
–		
–		
–		

CORING RECORD

INTERVAL	LOCATION	NO.	ANAL
–			
–			
–			
–			
–			

	GEOLOGICAL CONTACTS	TOP	ELEV	THICK
	KB / [illegible]	0.0		
	DRIFT / [illegible]	3.0		
DEVONIAN	PORT LAMBTON			
	KETTLE POINT			
	HAMILTON			
	MARCELLUS			
	DUNDEE	42.6		
	COLUMBUS			
	LUCAS	47.4		
	AMHERSTBURG	66.0		
	SYLVANIA			
	BOIS BLANC	105.0		
	SPRINGVALE			
	ORISKANY			
SILURIAN	BASS ISLANDS	117.0		
	G SHALE	201.7		
	F SHALE	214.5		
	F SALT			
	E CARBONATE	250.0		
	D SALT/EQUIVALENT	275.0		
	C SHALE	280.8		
	B MARKER	303.4		
	B EQUIVALENT	309.5		
	B SALT			
	B ANHYDRITE	319.9		
	A2 CARBONATE	325.6		
	A2 SALT			

SILURIAN	A2 ANHYDRITE	347.6		
	A1 CARBONATE	353.4		
	A1 SALT			
	A1 ANHYDRITE			
	GUELPH	362.2		
	ERAMOSA			
	GOAT ISLAND	388.8		
	GASPORT/WARTON	438.1		
	DECEW			
	ROCHESTER	476.8		
	IRONDEQUOIT			
	REYNALES/FOSSIL HILL	480.2		
	THOROLD			
	GRIMSBY			
	CABOT HEAD	482.6		
	MANITOULIN	521.2		
	WHIRLPOOL			
ORDOVICIAN	QUEENSTON	531.4		
	BLUE MOUNTAIN - GEORG. BAY	617.3		
	COLLINGWOOD			
	COBOURG	748.5		
	VERULAM	757.3		
	KIRKFIELD	805.3		
	COBOCONK	848.0		
	GULL RIVER	882.3		
	SHADOW LAKE	981.8		
CAMBRIAN		985.0		
PRECAMBRIAN		1030.4		

GEOLOGY BY T.R. Carter

CTY Essex TWP Maidstone BLK TRAC 6 LOT 16 CON VI

WELL NAME Consumers 34305 Maidstone 6-16-VI PERMIT 7185 INIT CLASS NPW

OPERATOR The Consumers Gas Company Ltd TARGET ORD CUR STATUS OSGS-SUS

DRILLING DATA

CONTRACTOR Underwater Gas Developers Ltd
RIG TYPE Rotary
CABLE TOP
BOT
ROTRY TOP 4.7
BOT 1123.0
DRLG FLD

DEPTHS
KB ELEV 189.6
LOGGER 1121.8
DRILLER 1123.0
DEEP END
PLUG BK

DATES

PERMIT 1987-09-02
SPUD 1987-09-15
COMPTD 1987-09-24
OFFCNF 1988-09-24
WRKOVR 1988-01-25
ABNDND

COORDINATES

NORTH m
SOUTH 131.0 m
EAST 562.5 m
WEST m
LAT 42-14-56
LONG 82-48-48

SAMPLES

TOP 30
BOT 1123
TRAV 9214-9215

INITIAL GAS RECORD

INTERVAL	FLOW	SIP
846.0 –		
–		
–		
–		
–		
–		

CASING AND TUBING RECORD

DIAM	WEIGHT	SET AT	HOW SET	RECOV
244	54	61.3	CEM	0
178	29.8	580.9	CEM	0
114	14.0	1113.8	CEM	0

COMPLETION DATA

GAS $10^3m^3/d$
OIL m^3/d
SIP MPa
FORM
INTRVL 844.0-854.0 m
871.6-880.3 m
931.3-938.8 m

INITIAL OIL RECORD

INTERVAL	FLOW	DENSITY
846.0 –		
855.0 –		
–		
–		
–		

LOGGING RECORD

INTERVAL	TYPE	COMPANY
61.0 – 1114.0	GRL	SCH
61.0 – 1117.0	CNFD	"
5.0 – 1117.0	SONL	"
800.0 – 1125.0	ELPR	"
61.0 – 1116.0	LATL	"
61.0 – 1116.0	MSFL	"
–		

PERF ☑ OPEN HOLE ☐

REMARKS

Water Analysis
Oil Analysis

A-2 Shale at 441.5

Poor samples - unable to pick Bois Blanc

INITIAL WATER RECORD

INTERVAL	STAT LEV	TYPE
65.0 –		SUL
203.0 –		–
858.0 –		SAL
–		
–		
–		

CORING RECORD

INTERVAL	LOCATION	NO.	ANAL
–			
–			
–			
–			
–			

	GEOLOGICAL CONTACTS	TOP	ELEV	THICK
	KB / [illegible]	0.0		
	DRIFT / [illegible]	4.7		
DEVONIAN	PORT LAMBTON			
	KETTLE POINT			
	HAMILTON			
	MARCELLUS			
	DUNDEE	36.3		
	COLUMBUS			
	LUCAS	69.0		
	AMHERSTBURG	105.0		
	SYLVANIA			
	BOIS BLANC			
	SPRINGVALE			
	ORISKANY			
SILURIAN	BASS ISLANDS	178.0		
	G SHALE	271.0		
	F SHALE	283.5		
	F SALT			
	E CARBONATE	326.2		
	D SALT/EQUIVALENT			
	C SHALE	363.0		
	B MARKER	394.8		
	B EQUIVALENT	402.1		
	B SALT			
	B ANHYDRITE	414.2		
	A2 CARBONATE	419.8		
	A2 SALT			

SILURIAN	A2 ANHYDRITE	443.7		
	A1 CARBONATE	449.1		
	A1 SALT			
	A1 ANHYDRITE			
	GUELPH	468.9		
	ERAMOSA			
	GOAT ISLAND	502.4		
	GASPORT/WARTON	521.0		
	DECEW			
	ROCHESTER	569.5		
	IRONDEQUOIT			
	REYNALES/FOSSIL HILL	574.0		
	THOROLD			
	GRIMSBY			
	CABOT HEAD	576.9		
	MANITOULIN	613.1		
	WHIRLPOOL			
ORDOVICIAN	QUEENSTON	626.0		
	BLUE MOUNTAIN - GEORG. BAY	704.2		
	COLLINGWOOD			
	COBOURG	818.0		
	VERULAM	836.8		
	KIRKFIELD	884.5		
	COBOCONK	931.0		
	GULL RIVER	958.8		
	SHADOW LAKE	1066.0		
CAMBRIAN		1070.0		
PRECAMBRIAN		1106.0		

GEOLOGY BY T.R. Carter

T.R. Carter

CTY Essex TWP Maidstone BLK TRAC 7 LOT 17 CON V

WELL NAME Cons/Ram 34246 Maidstone 7-17-V PERMIT 7109 INIT CLASS NPW

OPERATOR The Consumers Gas Co. Ltd. TARGET ORD CUR STATUS OP-SUS

DRILLING DATA

CONTRACTOR Underwater Gas Developers Ltd

RIG TYPE Rotary DEPTHS

CABLE TOP KB ELEV 187.2

BOT LOGGER 1120.0

ROTRY TOP 3.0 DRILLER 1120.0

BOT 1120.0 DEEP END

DRLG FLD PLUG BK

DATES

PERMIT 1987-02-16

SPUD 1987-02-18

COMPTD 1987-02-27

OFFCNF 1988-02-27

WRKOVR 1987-05-25

ABNDND

COORDINATES

NORTH m

SOUTH 191.5 m

EAST 127.9 m

WEST m

LAT

LONG

SAMPLES

TOP 3.0

BOT 1119.0

TRAY 9176-9177

INITIAL GAS RECORD

INTERVAL	FLOW	SIP
833 –	Show	
–		
–		
–		
–		
–		

INITIAL OIL RECORD

INTERVAL	FLOW	DENSITY
863 –	Show	
868 –	Show	
–		
–		
–		

INITIAL WATER RECORD

INTERVAL	STAT LEV	TYPE
75 –		
220 –		SUL
933 –		SAL
–		
–		
–		

CASING AND TUBING RECORD

DIAM	WEIGHT	SET AT	HOW SET	RECOV
744	54	49.1	CEM	0
178	29.8	573.5	"	0
114	14	1106.0	"	0

LOGGING RECORD

INTERVAL	TYPE	COMPANY
2.0 – 1109.0	GRL	SCH
48.0 – 1119.5	CNFD	"
–		
49.0 – 1119.5	LATL	
49.0 – 1119.5	MSFL	
2.0 – 1117.0	SONL	
573.0 – 1113.0	ELPR	

CORING RECORD

INTERVAL	LOCATION	NO	rec.
–			
–			
–			
–			

COMPLETION DATA

GAS 10³m³/d

OIL m³/d

SIP kPa

FORM

INTRVL m

m

m

PERF ☐ OPEN HOLE ☐

REMARKS

48.0-1119.5 MCT

A-2 Shale at 434.6

Useless samples from 333 to 576

GEOLOGICAL CONTACTS	TOP	ELEV	THICK
KB (LOCAL DATUM)	0.0		
DRIFT / UNCONSOLIDATED	3.0		
DEVONIAN: PORT LAMBTON			
KETTLE POINT			
HAMILTON			
MARCELLUS			
DUNDEE	37.8		
COLUMBUS	65.0		
LUCAS	73.0		
AMHERSTBURG	127.0		
SYLVANIA			
BOIS BLANC	165.0		
SPRINGVALE			
ORISKANY			
SILURIAN: BASS ISLANDS	190.0		
G SHALE	285.7		
F SHALE	291.3		
F SALT			
E CARBONATE	336.3		
D SALT/EQUIVALENT			
C SHALE	368.2		
B MARKER	391.8		
B EQUIVALENT	398.0		
B SALT			
B ANHYDRITE	407.7		
A2 CARBONATE	415.0		
A2 SALT			
A2 ANHYDRITE	435.3		
A1 CARBONATE	446.3		
A1 SALT			
A1 ANHYDRITE			
SILURIAN: GUELPH	456.0		
ERAMOSA			
GOAT ISLAND	466.0		
GASPORT/WARTON	506.2		
DECEW			
ROCHESTER	564.3		
IRONDEQUOIT			
REYNALES/FOSSIL HILL	569.0		
THOROLD			
GRIMSBY			
CABOT HEAD	572.8		
MANITOULIN	611.7		
WHIRLPOOL			
ORDOVICIAN: QUEENSTON	622.1		
BLUE MOUNTAIN - GEORG BAY	699.8		
COLLINGWOOD			
COBOURG	812.0		
VERULAM	830.5		
KIRKFIELD	878.0		
COBOCONK	924.5		
GULL RIVER	955.7		
SHADOW LAKE	1059.9		
CAMBRIAN	1062.3		
PRECAMBRIAN	1097.5		

GEOLOGY BY T.R. Carter

CTY Essex TWP Maidstone BLK TRAC 4 LOT 18 CON V

WELL NAME Consumers 34304 Maidstone 4-18-V PERMIT 7181 INIT CLASS DEV

OPERATOR The Consumers' Gas Company Ltd TARGET ORD CUR STATUS DH-ABD

DRILLING DATA

CONTRACTOR Underwater Gas Developers Limited

RIG TYPE Rotary DEPTHS

CABLE TOP KB ELEV 189.0

BOT LOGGER 1076.9

ROTRY TOP 4.7 DRILLER 1120.0

BOT 1120.0 DEEP END

DRLG FLD PLUG BK

DATES

PERMIT 1987-08-27

SPUD 1987-09-01

COMPTD 1987-09-11

OFFCNF 1988-02-27

WRKOVR

ABNDND 1988-02-01

COORDINATES

NORTH 185.1 m

SOUTH m

EAST m

WEST 508.2 m

LAT 42 14 05

LONG 82 47 40

SAMPLES

TOP 36

BOT 1113

TRAY 9236-9237

INITIAL GAS RECORD

INTERVAL	FLOW	SIP
–		
–		
–		
–		
–		
–		

INITIAL OIL RECORD

INTERVAL	FLOW	DENSITY
–		
–		
–		
–		
–		
–		

INITIAL WATER RECORD

INTERVAL	STAT LEV	TYPE
60 –		SUL
984 –		SAL
–		
–		
–		
–		

CASING AND TUBING RECORD

DIAM	WEIGHT	SET AT	HOW SET	RECOV
244	54	55.4	CEM	0
178	29.8	561.7	CEM	0
114	14.0	883.5	CEM	614.0
60	7.0	821.0	NAR	

LOGGING RECORD

INTERVAL	TYPE	COMPANY
54 – 1070	GRL	SCH
54 – 1076	CNFD	"
700 – 1070	ELPR	"
54 – 1070	LATL	"
54 – 1070	MSFL	"
–		
–		

CORING RECORD

INTERVAL	LOCATION	NO	rec.
–			
–			
–			
–			

COMPLETION DATA

GAS 10³m³/d

OIL m³/d

SIP kPa

FORM

INTRVL 830.8-835.6 m

839.2-840.2 m

m

PERF ☒ OPEN HOLE ☐

REMARKS

A-2 Shale at 417.2

GEOLOGICAL CONTACTS	TOP	ELEV	THICK
KB (LOCAL DATUM)	0.0		
DRIFT / UNCONSOLIDATED	4.7		
DEVONIAN: PORT LAMBTON			
KETTLE POINT			
HAMILTON			
MARCELLUS			
DUNDEE	37.0		
COLUMBUS			
LUCAS	69.0		
AMHERSTBURG	105.0		
SYLVANIA	165.0		
BOIS BLANC	171.0		
SPRINGVALE			
ORISKANY			
SILURIAN: BASS ISLANDS	185.0		
G SHALE	237.0		
F SHALE	251.0		
F SALT			
E CARBONATE	298.1		
D SALT/EQUIVALENT			
C SHALE	328.8		
B MARKER	373.4		
B EQUIVALENT	380.7		
B SALT			
B ANHYDRITE	391.8		
A2 CARBONATE	398.7		
A2 SALT			
A2 ANHYDRITE	418.0		
A1 CARBONATE	426.2		
A1 SALT			
A1 ANHYDRITE			
SILURIAN: GUELPH	441.3		
ERAMOSA			
GOAT ISLAND			
GASPORT/WARTON			
DECEW			
ROCHESTER	557.0		
IRONDEQUOIT			
REYNALES/FOSSIL HILL	561.1		
THOROLD			
GRIMSBY			
CABOT HEAD	565.0		
MANITOULIN	600.8		
WHIRLPOOL			
ORDOVICIAN: QUEENSTON	614.0		
BLUE MOUNTAIN - GEORG BAY	691.0		
COLLINGWOOD			
COBOURG	807.1		
VERULAM	825.7		
KIRKFIELD	873.0		
COBOCONK	919.9		
GULL RIVER	948.3		
SHADOW LAKE	1053.6		
CAMBRIAN	1056.2		
PRECAMBRIAN	1091.0		

GEOLOGY BY T.R. Carter

CTY: Essex TWP: Mersea BLK: TRAC: 3 LOT: 11 CON: I

WELL NAME: Consumers et al 34105 Mersea 3-11-I PERMIT: 7175 INIT CLASS: DEV

OPERATOR: The Consumers' Gas Company Ltd TARGET: ORD CUR STATUS: OP

DRILLING DATA

CONTRACTOR: Underwater Gas Developers Ltd
RIG TYPE: Rotary DEPTHS
CABLE TOP: KB ELEV: 182.7
BOT: LOGGER: 868.8
ROTRY TOP: 4.7 DRILLER:
BOT: 868.0 DEEP END:
DRLG FLD: PLUG BK:

DATES

PERMIT: 1987-08-17
SPUD: 1987-08-17
COMPTD: 1987-08-26
OFFCNF: 1987-09-25
WRKOVR:
ABNDND:

COORDINATES

NORTH: m
SOUTH: 453.9 m
EAST: 106.7 m
WEST: m
LAT: 42 02 28
LONG: 82 34 10

SAMPLES

TOP: 0
BOT: 868
TRAV: 9285-
9286

INITIAL GAS RECORD

INTERVAL	FLOW	SIP
770.7 – 807.2		6759
820.0 – 843.0		7661
–		
–		
–		
–		

CASING AND TUBING RECORD

DIAM	WEIGHT	SET AT	HOW SET	RECOV
244	54	39	CEM	0
178	29.8	477.7	CEM	0
114	14	857.7	CEM	0
60	7.0	785.4	BAR	0

COMPLETION DATA

GAS: 10 ^{3}m^3/d
OIL: m^3/d
SIP: kPa
FORM: Verulam
INTRVL: 794.2-795.2 m
776.0-785.0 m
m
m
PERF ☒ OPEN HOLE ☐

INITIAL OIL RECORD

INTERVAL	FLOW	DENSITY
782.0 – 783.0		
–		
–		
–		
–		

LOGGING RECORD

INTERVAL	TYPE	COMPANY
9.1 – 868.0	GRL	SCH
476.0 – 868.0	CNFD	"
9.1 – 868.0	SONL	"
730.0 – 868.0	ELPR	"
476.0 – 868.0	LATL	"
476.0 – 868.0	MSFL	"
–		

REMARKS

Oil analysis
Water analysis
Drill stem test
A-2 Shale at 302.3

INITIAL WATER RECORD

INTERVAL	STAT LEV	TYPE
68.0 –		SUL
153.0 –		SAL
–		
–		
–		
–		

CORING RECORD

INTERVAL	LOCATION	NO.	mm
–			
–			
–			
–			
–			

Gypsum at 55m
Samples missing

GEOLOGICAL CONTACTS	TOP	ELEV	THICK
KB / [illegible]	0.0		
DRIFT / [illegible]	4.7		
PORT LAMBTON			
KETTLE POINT			
HAMILTON			
MARCELLUS			
DUNDEE	18.9		
COLUMBUS			
LUCAS	45.0		
AMHERSTBURG	69.0		
SYLVANIA			
BOIS BLANC	112.0		
SPRINGVALE			
ORISKANY	122.0		
BASS ISLANDS	130.0		
G SHALE	177.6		
F SHALE	185.0		
F SALT			
E CARBONATE	224.6		
D SALT/EQUIVALENT			
C SHALE	250.5		
B MARKER	266.0		
B EQUIVALENT	271.5		
B SALT			
B ANHYDRITE	280.7		
A2 CARBONATE	284.0		
A2 SALT			
A2 ANHYDRITE	304.0		
A1 CARBONATE	307.8		
A1 SALT			
A1 ANHYDRITE			
GUELPH	325.8		
ERAMOSA			
GOAT ISLAND			
GASPORT/MARTON			
DECEW			
ROCHESTER	471.2		
IRONDEQUOIT			
REYNALES/FOSSIL HILL	477.0		
THOROLD			
GRIMSBY			
CABOT HEAD	481.0		
MANITOULIN	520.0		
WHIRLPOOL			
QUEENSTON	530.0		
BLUE MOUNTAIN - GEORG BAY	616.0		
COLLINGWOOD			
COBOURG	763.0		
VERULAM	777.3		
KIRKFIELD	823.0		
COBOCONK	858.0		
GULL RIVER			
SHADOW LAKE			
CAMBRIAN			
PRECAMBRIAN			

GEOLOGY BY T.R. Carter

CTY: Essex TWP: Mersea BLK: TRAC: 2 LOT: 15 CON: B

WELL NAME: Cons et al 34103 Mersea 2-15-B PERMIT: 7097 INIT CLASS: DEV

OPERATOR: The Consumers' Gas Co. Ltd. TARGET: ORD CUR STATUS: OP

DRILLING DATA

CONTRACTOR: Underwater Gas Developers Ltd
RIG TYPE: Rotary DEPTHS
CABLE TOP: KB ELEV: 179.8
BOT: LOGGER: 876.5
ROTRY TOP: 3.0 DRILLER: 876.8
BOT: 876.8 DEEP END:
DRLG FLD: PLUG BK:

DATES

PERMIT: 1986-12-23
SPUD: 1987-01-07
COMPTD: 1987-01-14
OFFCNF: 1987-02-13
WRKOVR:
ABNDND:

COORDINATES

NORTH: m
SOUTH: 107.0 m
EAST: 194.8 m
WEST: m
LAT: 42 01 03
LONG: 82 32 27

SAMPLES

TOP: 3.0
BOT: 186.0
TRAV: 9170-
9171

INITIAL GAS RECORD

INTERVAL	FLOW	SIP
780 – 795	Show	
–		
–		
–		
–		
–		

CASING AND TUBING RECORD

DIAM	WEIGHT	SET AT	HOW SET	RECOV
244	54	59.1	CEM	0
178	29.8	477.8	CEM	0
114	14.0	869.5	CEM	0
60	7.0	768.4	BAR	0

COMPLETION DATA

GAS:
OIL: NA m^3/d
SIP: 7027 kPa
FORM: Cobourg, Verulam
INTRVL: 775.0-796.2 m
m
m
PERF ☒ OPEN HOLE ☐

INITIAL OIL RECORD

INTERVAL	FLOW	DENSITY
780 – 795	Show	
–		
–		
–		
–		
–		

LOGGING RECORD

INTERVAL	TYPE	COMPANY
20.0 – 869.5	CNFD	SCH
20.0 – 866.0	GRL	"
10.0 – 872.0	SONL	"
59.0 – 873.0	DLL	"
477.0 – 875.5	MSFL	"
476.0 – 870.0	ELPR	"
–		

REMARKS

Flowed 0.7m³ in
15 minutes after
1 hour shut-in

INITIAL WATER RECORD

INTERVAL	STAT LEV	TYPE
71 –		SAL
395 –		SUL
825 –		SAL
–		
–		
–		

CORING RECORD

INTERVAL	LOCATION	NO.	mm
–			
–			
–			
–			
–			

GEOLOGICAL CONTACTS	TOP	ELEV	THICK
KB / [illegible]	0.0		
DRIFT / [illegible]	3.0		
PORT LAMBTON			
KETTLE POINT			
HAMILTON			
MARCELLUS			
DUNDEE	26.8		
COLUMBUS			
LUCAS	51.0		
AMHERSTBURG	72.0		
SYLVANIA			
BOIS BLANC	108.0		
SPRINGVALE			
ORISKANY			
BASS ISLANDS	124.5		
G SHALE	169.0		
F SHALE	176.3		
F SALT			
E CARBONATE	215.1		
D SALT/EQUIVALENT			
C SHALE	242.0		
B MARKER	259.1		
B EQUIVALENT	264.6		
B SALT			
B ANHYDRITE	274.6		
A2 CARBONATE	282.2		
A2 SALT			
A2 ANHYDRITE	299.5		
A1 CARBONATE	302.3		
A1 SALT			
A1 ANHYDRITE			
GUELPH	306.5		
ERAMOSA			
GOAT ISLAND	381.1		
GASPORT/MARTON	397.0		
DECEW			
ROCHESTER	462.3		
IRONDEQUOIT			
[illegible]/FOSSIL HILL	468.2		
THOROLD			
GRIMSBY			
CABOT HEAD	472.3		
MANITOULIN	511.4		
WHIRLPOOL			
QUEENSTON	521.8		
BLUE MOUNTAIN - GEORG BAY	608.0		
COLLINGWOOD			
COBOURG	769.0		
VERULAM	772.3		
KIRKFIELD	796.2		
COBOCONK	863.0		
GULL RIVER			
SHADOW LAKE			
CAMBRIAN			
PRECAMBRIAN			

GEOLOGY BY T.R. Carter

T.R. Carter

CTY Essex TWP Mersea BLK TRAC 3 LOT 15 CON I

WELL NAME Cons et al 34335 Mersea 3-15-1 PERMIT 7201 INIT CLASS NPW

OPERATOR The Consumers' Gas Company Ltd. TARGET ORD CUR STATUS DH-SUS

DRILLING DATA

CONTRACTOR Underwater Gas Developers Ltd
RIG TYPE Rotary
CABLE TOP
BOT
ROTRY TOP 4.7
BOT 1071
DRLG FLD

DEPTHS
KB ELEV 183.3
LOGGER 1070.6
DRILLER 1071.0
DEEP END
PLUG BK 950.0

DATES

PERMIT 1987-11-13
SPUD 1987-11-17
COMPTD 1987-11-25
OFFCNF 1988-11-25
WRKOVR
ABNDND

COORDINATES

NORTH m
SOUTH 453.1 m
EAST 192.0 m
WEST m
LAT 42 02 23.5
LONG 82 32 21

SAMPLES

TOP 6
BOT 1071
TRAV 9365-
9366

INITIAL GAS RECORD

INTERVAL	FLOW	SIP
–		
–		
–		
–		
–		
–		

CASING AND TUBING RECORD

DIAM	WEIGHT	SET AT	HOW SET	RECOV
244	54	47.7	CEM	0
178	29.8	483.7	CEM	0

COMPLETION DATA

GAS 10³m³/d
OIL m³/d
SIP kPa
FORM
INTRVL m
m
m

INITIAL OIL RECORD

INTERVAL	FLOW	DENSITY
–		
–		
–		
–		
–		
–		

LOGGING RECORD

INTERVAL	TYPE	COMPANY
15.0 – 1062.5	GRL	SCH
15.0 – 1062.5	CNFD	"
47.5 – 1066.3	LATL	"
15.0 – 1067.0	SONL	"
–		
–		
–		

PERF ☐ OPEN HOLE ☐

REMARKS

Water analysis

Lost circulation at 896
No A-2 Shale

INITIAL WATER RECORD

INTERVAL	STAT LEV	TYPE
148.0 –		SAL
892.0 –		SAL
–		
–		
–		
–		

CORING RECORD

INTERVAL	LOCATION	NO	cm
–			
–			
–			
–			
–			

GEOLOGICAL CONTACTS

		TOP	ELEV	THICK
	KB / [illegible]	0.0		
	DRIFT / [illegible]	4.7		
DEVONIAN	PORT LAMBTON			
	KETTLE POINT			
	HAMILTON			
	MARCELLUS			
	DUNDEE	24.0		
	COLUMBUS			
	LUCAS	53.0		
	AMHERSTBURG	69.0		
	SYLVANIA			
	BOIS BLANC	108.0		
	SPRINGVALE	114.0		
	ORISKANY			
SILURIAN	BASS ISLANDS	123.0		
	G SHALE	176.2		
	F SHALE	183.2		
	F SALT			
	E CARBONATE	224.0		
	D SALT/EQUIVALENT			
	C SHALE	249.7		
	B MARKER	265.3		
	B EQUIVALENT	271.9		
	B SALT			
	B ANHYDRITE	280.7		
	A2 CARBONATE	285.7		
	A2 SALT			
	A2 ANHYDRITE	304.1		
	A1 CARBONATE	307.9		
	A1 SALT			
	A1 ANHYDRITE			
	GUELPH	314.9		
	ERAMOSA			
	GOAT ISLAND			
	GASPORT/WARTON			
	DECEW			
	ROCHESTER	469.1		
	IRONDEQUOIT			
	RICHARDS/FOSSIL HILL	475.0		
	THOROLD			
	GRIMSBY			
	CABOT HEAD	479.0		
	MANITOULIN	518.2		
	WHIRLPOOL			
ORDOVICIAN	QUEENSTON	528.3		
	BLUE MOUNTAIN - GEORG BAY	615.0		
	COLLINGWOOD			
	COBOURG	771.2		
	VERULAM	786.8		
	KIRKFIELD	835.0		
	COBOCONK	870.6		
	GULL RIVER	901.3		
	SHADOW LAKE	1007.1		
CAMBRIAN		1010.0		
PRECAMBRIAN		1056.9		

GEOLOGY BY T.R. Carter

CTY Essex TWP Mersea BLK TRAC 7 LOT 19 CON VIII

WELL NAME Ram 99 Mersea 7-19-VIII PERMIT 7200 INIT CLASS NPW

OPERATOR Ram Petroleums Limited TARGET ORD CUR STATUS OP

DRILLING DATA

CONTRACTOR B & S Rotary Drilling
RIG TYPE Rotary
CABLE TOP
BOT
ROTRY TOP 3.5
BOT 1081.0
DRLG FLD

DEPTHS
KB ELEV 193.5
LOGGER 1078.4
DRILLER 1081.0
DEEP END
PLUG BK

DATES

PERMIT 1988-11-13
SPUD 1987-12-01
COMPTD 1987-12-18
OFFCNF 1988-12-18
WRKOVR 1989-01-05
ABNDND

COORDINATES

NORTH 107.0 m
SOUTH m
EAST 107.0 m
WEST m
LAT 42 07 13
LONG 82 30 19

SAMPLES

TOP 48
BOT 1081
TRAV 9281-
9282

INITIAL GAS RECORD

INTERVAL	FLOW	SIP
–		
–		
–		
–		
–		
–		

CASING AND TUBING RECORD

DIAM	WEIGHT	SET AT	HOW SET	RECOV
299	62.5	47.3	CEM	0
219	36.0	503.1	CEM	0
140	20.8	1059.5	CEM	0

COMPLETION DATA

GAS 10³m³/d
OIL m³/d
SIP 8075 kPa
FORM
INTRVL 811.5–814.5 m
m
m

INITIAL OIL RECORD

INTERVAL	FLOW	DENSITY
814.5 – 815.5		
–		
–		
–		
–		
–		

LOGGING RECORD

INTERVAL	TYPE	COMPANY
5.0 – 1076.0	GRL	Pres.-Atlas
485.0 – 1077.9	CNFD	"
5.0 – 1076.0	SONL	"
502.0 – 1078.0	LATL	"
502.0 – 1078.0	MSFL	"
540.0 – 1030.0	CBHD	SCH
–		

PERF ☑ OPEN HOLE ☐

REMARKS

Drill stem test
A-2 Shale at 347.6

INITIAL WATER RECORD

INTERVAL	STAT LEV	TYPE
–		
–		
–		
–		
–		
–		

CORING RECORD

INTERVAL	LOCATION	NO	cm
–			
–			
–			
–			
–			

GEOLOGICAL CONTACTS

		TOP	ELEV	THICK
	KB / [illegible]	0.0		
	DRIFT / [illegible]	3.5		
DEVONIAN	PORT LAMBTON			
	KETTLE POINT			
	HAMILTON			
	MARCELLUS			
	DUNDEE	38.2		
	COLUMBUS			
	LUCAS	72.0		
	AMHERSTBURG	98.5		
	SYLVANIA			
	BOIS BLANC	135.0		
	SPRINGVALE			
	ORISKANY	153.6		
SILURIAN	BASS ISLANDS	162.0		
	G SHALE	207.7		
	F SHALE	214.8		
	F SALT			
	E CARBONATE	255.3		
	D SALT/EQUIVALENT			
	C SHALE	289.0		
	B MARKER	310.2		
	B EQUIVALENT	315.3		
	B SALT			
	B ANHYDRITE	325.1		
	A2 CARBONATE	331.3		
	A2 SALT			
	A2 ANHYDRITE	348.5		
	A1 CARBONATE	353.1		
	A1 SALT			
	A1 ANHYDRITE			
	GUELPH	357.1		
	ERAMOSA			
	GOAT ISLAND			
	GASPORT/WARTON			
	DECEW			
	ROCHESTER	495.2		
	IRONDEQUOIT			
	RICHARDS/FOSSIL HILL	501.5		
	THOROLD			
	GRIMSBY			
	CABOT HEAD	505.3		
	MANITOULIN	544.1		
	WHIRLPOOL			
ORDOVICIAN	QUEENSTON	554.6		
	BLUE MOUNTAIN - GEORG BAY	643.0		
	COLLINGWOOD			
	COBOURG	789.0		
	VERULAM	807.2		
	KIRKFIELD	859.6		
	COBOCONK	893.3		
	GULL RIVER	924.0		
	SHADOW LAKE	1030.2		
CAMBRIAN		1031.0		
PRECAMBRIAN		1066.2		

GEOLOGY BY T.R. Carter

CTY:	Essex	TWP:	Mersea	BLK:	TRAC:	2	LOT:	20	CON:	VII	
WELL NAME:	Consumers et al 34150 Mersea 2-20-VII			PERMIT:	7168		INIT CLASS:		NFW		
OPERATOR:	The Consumers' Gas Company Ltd			TARGET:	ORD		CUR STATUS:		OP		

DRILLING DATA				DATES		COORDINATES			SAMPLES	
CONTRACTOR:	Underwater Gas Developers Ltd			PERMIT:	1987-07-29	NORTH:		m	TOP:	38
RIG TYPE:	Rotary	DEPTHS		SPUD:	1987-08-05	SOUTH:	223.7	m	BOT:	1089
CABLE TOP:		KB ELEV:	192.7	COMPTD:	1987-08-13	EAST:	271.4	m	TRAV:	9274-
BOT:		LOGGER:	1087.0	OFFCNF:	1988-08-13	WEST:		m		9275
ROTRY TOP:	4.7	DRILLER:	1090.0	WRKOVR:		LAT:	42 07 00			
BOT:	1090.0	DEEP END:		ABNDND:		LONG:	82 29 46			
DRLG FLD:		PLUG BK:								

INITIAL GAS RECORD			CASING AND TUBING RECORD					COMPLETION DATA	
INTERVAL	FLOW	SIP	DIAM	WEIGHT	SET AT	HOW SET	RECOV	GAS	10³m³/d
806.1 – 835.0		7652	244	56	56.5	CEM	0	OIL	m³/d
866.1 – 890.0		9089	178	25.3	507.4	CEM	0	SIP	kPa
–			114	14	1086.3	CEM	0	FORM:	
–			60	7.0	819.8	BAF	0	INTVAL	821.5-831.4 m
–									m
–									m

INITIAL OIL RECORD			LOGGING RECORD			COMPLETION DATA	
INTERVAL	FLOW	DENSITY	INTERVAL	TYPE	COMPANY	PERF ☐	OPEN HOLE ☐
828.0 – 831			10.0 – 1090	GRL	SCH	REMARKS	
–			53.0 – 1086.0	CNFD	"	Oil analysis	
–			5.0 – 1092.5	SONL	"	Water analysis	
–			800.0 – 1090.5	ELPR	"	Drill stem test	
–			35.0 – 1086.6	LATL	"		
–			35.0 – 1086.6	MSFL	"	A-2 Shale at 347.5	
			820.0 – 1087.0	CBLR	"		

INITIAL WATER RECORD			CORING RECORD				Numerous missing samples
INTERVAL	STAT LEV	TYPE	INTERVAL	LOCATION	NO	cm	
108.5 –		SUL	–				
166.0 –		SAL	–				
–			–				
–			–				
–			–				
–			–				

GEOLOGICAL CONTACTS		TOP	ELEV	THICK			TOP	ELEV	THICK
KB / [illegible]		0.0			A2 ANHYDRITE		340.4		
DRIFT / [illegible]		4.7			A1 CARBONATE		352.7		
DEVONIAN	PORT LAMBTON				A1 SALT				
	KETTLE POINT				A1 ANHYDRITE				
	HAMILTON				GUELPH		369.0		
	MARCELLUS				ERAMOSA				
	DUNDEE	38.1			GOAT ISLAND		453.7		
	COLUMBUS				GASPORT/WARREN		481.2		
	LUCAS	87.0			DECEW				
	AMHERSTBURG	105.0			ROCHESTER		499.0		
	SYLVANIA				IRONDEQUOIT				
	BOIS BLANC	147.0			REYNALES/FOSSIL HILL		505.0		
	SPRINGVALE				THOROLD				
	ORISKANY	159.0			GRIMSBY				
SILURIAN	BASS ISLANDS	166.0			CABOT HEAD		509.0		
	G SHALE	216.2			MANITOULIN		548.0		
	F SHALE	223.3			WHIRLPOOL				
	F SALT				QUEENSTON		557.3		
	E CARBONATE	265.3			BLUE MOUNTAIN - GEORG BAY		647.5		
	D SALT/EQUIVALENT				COLLINGWOOD				
	C SHALE	292.6			COBOURG		799.1		
	B MARKER	311.5			VERULAM		808.0		
	B EQUIVALENT	316.5			KIRKFIELD		862.0		
	B SALT				COBOCONK		903.7		
	B ANHYDRITE	325.5			GULL RIVER		933.4		
	A2 CARBONATE	330.3			SHADOW LAKE		1037.8		
	A2 SALT				CAMBRIAN		1038.5		
					PRECAMBRIAN		1073.1		

GEOLOGY BY T.R. Carter

CTY:	Essex	TWP:	Mersea	BLK:	TRAC:	8	LOT:	228	CON:	XTR	
WELL NAME:	Cons et al 34282 Mersea 8-228-WTR			PERMIT:	7182		INIT CLASS:		NFW		
OPERATOR:	The Consumers' Gas Company Ltd			TARGET:	SAL		CUR STATUS:		DH-ABD		

DRILLING DATA				DATES		COORDINATES			SAMPLES	
CONTRACTOR:	Charles Shaw Drilling Ltd			PERMIT:	1987-08-27	NORTH:	114.9	m	TOP:	
RIG TYPE:	Cable	DEPTHS		SPUD:	1987-09-04	SOUTH:		m	BOT:	
CABLE TOP:	1.8	KB ELEV:	183.2	COMPTD:	1987-10-03	EAST:		m	TRAV:	
BOT:	391.0	LOGGER:		OFFCNF:	1988-10-03	WEST:	170.7	m		
ROTRY TOP:		DRILLER:	391.0	WRKOVR:		LAT:	42 04 27			
BOT:		DEEP END:		ABNDND:	1987-10-06	LONG:	82 31 01			
DRLG FLD:		PLUG BK:								

INITIAL GAS RECORD			CASING AND TUBING RECORD					COMPLETION DATA	
INTERVAL	FLOW	SIP	DIAM	WEIGHT	SET AT	HOW SET	RECOV	GAS	10³m³/d
–			273	60	27.9	SHO	27.9	OIL	m³/d
–			178	30	219.3	CEM	31.0	SIP	kPa
–								FORM:	
–								INTVAL	m
–									m
–									m

INITIAL OIL RECORD			LOGGING RECORD			COMPLETION DATA	
INTERVAL	FLOW	DENSITY	INTERVAL	TYPE	COMPANY	PERF ☐	OPEN HOLE ☐
–			50.0 – 381.0	GRL	SCH	REMARKS	
–			50.0 – 383.5	CNL	"	No samples	
–			218.0 – 390.0	LDT	"	A-2 Shale at 329.8	
–			10.0 – 386.0	SONL	"		
–			–				
–			–				
–			–				

INITIAL WATER RECORD			CORING RECORD				
INTERVAL	STAT LEV	TYPE	INTERVAL	LOCATION	NO	cm	
29 –		FRE	–				
327 –		SUL	–				
354 –		SUL	–				
–			–				
–			–				
–			–				

GEOLOGICAL CONTACTS		TOP	ELEV	THICK			TOP	ELEV	THICK
KB / [illegible]		0.0			A2 ANHYDRITE		332.0		
DRIFT / [illegible]		1.8			A1 CARBONATE		335.6		
DEVONIAN	PORT LAMBTON				A1 SALT				
	KETTLE POINT				A1 ANHYDRITE				
	HAMILTON				GUELPH		346.0		
	MARCELLUS				ERAMOSA				
	DUNDEE	27.9			GOAT ISLAND				
	COLUMBUS				GASPORT/WARREN				
	LUCAS	72.0			DECEW				
	AMHERSTBURG	87.0			ROCHESTER				
	SYLVANIA				IRONDEQUOIT				
	BOIS BLANC	103.0			REYNALES/FOSSIL HILL				
	SPRINGVALE				THOROLD				
	ORISKANY				GRIMSBY				
SILURIAN	BASS ISLANDS	147.0			CABOT HEAD				
	G SHALE	199.1			MANITOULIN				
	F SHALE	206.6			WHIRLPOOL				
	F SALT				QUEENSTON				
	E CARBONATE	246.2			BLUE MOUNTAIN - GEORG BAY				
	D SALT/EQUIVALENT				COLLINGWOOD				
	C SHALE	273.3			COBOURG				
	B MARKER	290.9			VERULAM				
	B EQUIVALENT	296.3			KIRKFIELD				
	B SALT				COBOCONK				
	B ANHYDRITE	306.6			GULL RIVER				
	A2 CARBONATE	314.0			SHADOW LAKE				
	A2 SALT				CAMBRIAN				
					PRECAMBRIAN				

GEOLOGY BY T.R. Carter

T.R. Carter

CTY Essex TWP Sandwich South BLK TRAC 1 LOT 9 CON XII
WELL NAME Pembina Sandwich South 1-9-XII PERMIT 7123 INIT CLASS RFV
OPERATOR Pembina Exploration Ltd TARGET SAL CUR STATUS OSCS-ABD

DRILLING DATA
CONTRACTOR Shaw Drilling Company
RIG TYPE Cable DEPTHS
CABLE TOP 1.2 KB ELEV 190.7
BOT 485.5 LOGGER
ROTRY TOP DRILLER 485.5
BOT DEEP END
DRLG FLD PLUG BK

DATES
PERMIT 1987-06-02
SPUD 1987-06-17
COMPTD 1987-07-14
OFFCNF 1988-07-14
WNKOVR
ABNDND 1987-07-17

COORDINATES
NORTH m
SOUTH 452.9 m
EAST m
WEST 265.1 m
LAT 42 13 15
LONG 82 52 42

SAMPLES
TOP 27
BOT 485
TRAY 9071

INITIAL GAS RECORD

INTERVAL	FLOW	SIP
414.0 –		
–		
–		
–		
–		
–		

CASING AND TUBING RECORD

DIAM	WEIGHT	SET AT	HOW SET	RECOV
273	60	27.4	SBO	8.54
178	30	244.6	CEM	8.72

COMPLETION DATA
GAS 10³m³/d
OIL m³/d
SIP kPa
PORS
INTVL m
m
m

INITIAL OIL RECORD

INTERVAL	FLOW	DENSITY
380.0 – 383.0		
419.0 – 422.0		0.842
–		
–		
–		

LOGGING RECORD

INTERVAL	TYPE	COMPANY
15.0 – 485.5	GRL	Dres.-Atlas
244.0 – 485.5	CNFD	"
251.0 – 484.5	DIFM	"
27.4 – 483.5	ACSL	"
244.5 – 484.0	LATL	"
–		
–		

PERF ☐ OPEN HOLE ☐

REMARKS
Oil analysis
Water analysis

A-2 Shale at 490.9

INITIAL WATER RECORD

INTERVAL	STAT LEV	TYPE
52.0 –	25.0	SUL
422.0 – 485.5	43.0	SAL
–		
–		
–		
–		

CORING RECORD

INTERVAL	LOCATION	NO	mm
–			
–			
–			
–			
–			

GEOLOGICAL CONTACTS	TOP	ELEV	THICK
KB / [illegible]	0.0		
DRIFT / [illegible]	1.2		
DEVONIAN: PORT LAMBTON			
KETTLE POINT			
HAMILTON			
MARCELLUS			
DUNDEE	26.5		
COLUMBUS	37.0		
LUCAS	57.0		
AMHERSTBURG	98.0		
SYLVANIA	130.5		
BOIS BLANC	152.0		
SPRINGVALE			
ORISKANY			
SILURIAN: BASS ISLANDS	174.0		
G SHALE	233.2		
F SHALE	239.5		
F SALT			
E CARBONATE	282.0		
D SALTEQUIVALENT			
C SHALE	313.0		
B MARKER	352.0		
B EQUIVALENT	358.2		
B SALT			
B ANHYDRITE	373.4		
A2 CARBONATE	381.0		
A2 SALT			
A2 ANHYDRITE	402.0		
A1 CARBONATE	408.3		
A1 SALT			
A1 ANHYDRITE			
GUELPH	426.0		
ERAMOSA			
GOAT ISLAND	459.4		
GASPORT/MARTON			
DECEW			
ROCHESTER			
IRONDEQUOIT			
REYNALES/FOSSIL HILL			
THOROLD			
GRIMSBY			
CABOT HEAD			
MANITOULIN			
WHIRLPOOL			
ORDOVICIAN: QUEENSTON			
BLUE MOUNTAIN GEORG BAY			
COLLINGWOOD			
COBOURG			
VERULAM			
KIRKFIELD			
COBOCONK			
GULL RIVER			
SHADOW LAKE			
CAMBRIAN			
PRECAMBRIAN			

GEOLOGY BY T.R. Carter

CTY Essex TWP Sandwich West BLK TRAC LOT CON Fighting Is
WELL NAME Cansalt DDH 87-3 Fighting Island PERMIT 7143 INIT CLASS STR
OPERATOR The Canadian Salt Company Ltd. TARGET SAL CUR STATUS STR-ABD

DRILLING DATA
CONTRACTOR Longyear Canada
RIG TYPE Diamond Drill DEPTHS
CABLE TOP KB ELEV 177.4
BOT LOGGER
ROTRY TOP 1.2 DRILLER 289.0
BOT 289.0 DEEP END
DRLG FLD PLUG BK

DATES
PERMIT 1987-05-11
SPUD 1987-05-12
COMPTD 1987-05-16
OFFCNF 1987-06-15
WNKOVR
ABNDND 1987-05-18

COORDINATES
NORTH m
SOUTH m
EAST m
WEST m
LAT 42 12 25
LONG 83 06 53

SAMPLES
TOP 32.3
BOT 288.6
TRAY 9283-
9284

INITIAL GAS RECORD

INTERVAL	FLOW	SIP
–		
–		
–		
–		
–		
–		

CASING AND TUBING RECORD

DIAM	WEIGHT	SET AT	HOW SET	RECOV
		32	CEM	0
		197		197

COMPLETION DATA
GAS 10³m³/d
OIL m³/d
SIP kPa
PORS
INTVL m
m
m

INITIAL OIL RECORD

INTERVAL	FLOW	DENSITY
–		
–		
–		
–		
–		
–		

LOGGING RECORD

INTERVAL	TYPE	COMPANY
–		
–		
–		
–		
–		
–		

PERF ☐ OPEN HOLE ☐

REMARKS
Samples missing
246.0 to 272.8

INITIAL WATER RECORD

INTERVAL	STAT LEV	TYPE
–		
–		
–		
–		
–		
–		

CORING RECORD

INTERVAL	LOCATION	NO	mm
32 – 289	PBL	953	
–			
–			
–			
–			

GEOLOGICAL CONTACTS	TOP	ELEV	THICK
KB / [illegible]	0.0		
DRIFT / [illegible]	1.2		
DEVONIAN: PORT LAMBTON			
KETTLE POINT			
HAMILTON			
MARCELLUS			
DUNDEE			
COLUMBUS			
LUCAS	32.3		
AMHERSTBURG	50.8		
SYLVANIA	76.1		
BOIS BLANC	107.3		
SPRINGVALE			
ORISKANY			
SILURIAN: BASS ISLANDS	135.6		
G SHALE	199.9		
F SHALE	204.5		
F SALT	248.1		
E CARBONATE	272.8		
D SALTEQUIVALENT			
C SHALE			
B MARKER			
B EQUIVALENT			
B SALT			
B ANHYDRITE			
A2 CARBONATE			
A2 SALT			
A2 ANHYDRITE			
A1 CARBONATE			
A1 SALT			
A1 ANHYDRITE			
GUELPH			
ERAMOSA			
GOAT ISLAND			
GASPORT/MARTON			
DECEW			
ROCHESTER			
IRONDEQUOIT			
REYNALES/FOSSIL HILL			
THOROLD			
GRIMSBY			
CABOT HEAD			
MANITOULIN			
WHIRLPOOL			
ORDOVICIAN: QUEENSTON			
BLUE MOUNTAIN - GEORG BAY			
COLLINGWOOD			
COBOURG			
VERULAM			
KIRKFIELD			
COBOCONK			
GULL RIVER			
SHADOW LAKE			
CAMBRIAN			
PRECAMBRIAN			

GEOLOGY BY T.R. Carter

CTY Essex TWP Sandwich West RLE TRAC LOT CON Fighting Is

WELL NAME Consolt DDH 2 Fighting Island PERMIT 7135 WELL CLASS STR

OPERATOR The Canadian Salt Company Ltd TARGET SAL CUR STATUS STR-ABD

DRILLING DATA				DATES		COORDINATES		SAMPLES
CONTRACTOR	Longyear Canada			PERMIT	1987-04-13	NORTH	m	TOP
RIG TYPE	Diamond Drill	DEPTHS		SPUD	1987-05-02	SOUTH	m	BOT
CABLE TOP		KB ELEV	176.2	COMPTD	1987-05-09	EAST	m	TRAV
BOT		LOGGER		OFFCONF	1987-06-08	WEST	m	
ROTRY TOP	0.0	DRILLER	313	WINDOW		LAT	42°13'51.5"	
BOT	313	DEEP END		ABNDND	1987-05-10	LONG	83°06'50"	
DRLG FLD		PLUG BK						

INITIAL GAS RECORD

INTERVAL	FLOW	SIP
–		
–		
–		
–		
–		

CASING AND TUBING RECORD

DIAM	WEIGHT	SET AT	HOW SET	RECOV
SW	12.8	32	CEM	0
SO	11.5	225		225
SO	7.6			

COMPLETION DATA

GAS	10³m³/d
OIL	m³/d
SIP	kPa
FORM	
INTRVL	m
	m
	m
PERF ☐	OPEN HOLE ☐

INITIAL OIL RECORD

INTERVAL	FLOW	DENSITY
–		
–		
–		
–		
–		

LOGGING RECORD

INTERVAL	TYPE	COMPANY
–		
–		
–		
–		
–		
–		

REMARKS

No samples - core only

Depths measured relative to ground level (KB = GL)

INITIAL WATER RECORD

INTERVAL	STAT LEV	TYPE
–		
–		
–		
–		
–		

CEMENT RECORD

INTERVAL	LOCATION	MD	mm
32 – 226	PBL		
226 – 313			
–			
–			
–			

GEOLOGICAL CONTACTS	TOP	ELEV	THICK
KB / GROUND LEVEL	0.0		
DRIFT / BEDROCK SURFACE	0.0		
PORT LAMBTON			
KETTLE POINT			
HAMILTON			
MARCELLUS			
DUNDEE			
COLUMBUS			
LUCAS			
AMHERSTBURG			
SYLVANIA			
BOIS BLANC			
SPRINGVALE			
ORISKANY			
BASS ISLANDS			
G SHALE			
F SHALE			
F SALT			
E CARBONATE			
D SALT/EQUIVALENT			
C SHALE			
B MARKER			
B EQUIVALENT			
B SALT			
B ANHYDRITE			
A2 CARBONATE			
A2 SALT			
A2 ANHYDRITE			
A1 CARBONATE			
A1 SALT			
A1 ANHYDRITE			
GUELPH			
ERAMOSA			
GOAT ISLAND			
GASPORT/MANITOU			
DECEW			
ROCHESTER			
IRONDEQUOIT			
REYNALES/FOSSIL HILL			
THOROLD			
GRIMSBY			
CABOT HEAD			
MANITOULIN			
WHIRLPOOL			
QUEENSTON			
BLUE MOUNTAIN - GEORG BAY			
COLLINGWOOD			
COBOURG			
VERULAM			
KIRKFIELD			
COBOCONK			
GULL RIVER			
SHADOW LAKE			
CAMBRIAN			
PRECAMBRIAN			

GEOLOGY BY T.R. Carter

CTY Essex TWP Sandwich West RLE TRAC LOT CON Fighting Is

WELL NAME Consolt DDH 1-Fighting Island PERMIT 7134 WELL CLASS STR

OPERATOR The Canadian Salt Company Limited TARGET SAL CUR STATUS STR-ABD

DRILLING DATA				DATES		COORDINATES		SAMPLES
CONTRACTOR	Longyear Canada			PERMIT	1987-04-13	NORTH	m	TOP
RIG TYPE	Diamond Drill	DEPTHS		SPUD	1987-04-17	SOUTH	m	BOT
CABLE TOP		KB ELEV	177.4	COMPTD	1987-04-28	EAST	m	TRAV
BOT		LOGGER		OFFCONF	1987-05-20	WEST	m	
ROTRY TOP	0.0	DRILLER	463.2	WINDOW		LAT	42°14'32"	
BOT	463.2	DEEP END		ABNDND	1987-04-29	LONG	83°06'34"	
DRLG FLD		PLUG BK						

INITIAL GAS RECORD

INTERVAL	FLOW	SIP
–		
–		
–		
–		
–		

CASING AND TUBING RECORD

DIAM	WEIGHT	SET AT	HOW SET	RECOV
SW	12.8	47.0	CEM	0
SO	11.5	225.0		226.2

COMPLETION DATA

GAS	10³m³/d
OIL	m³/d
SIP	kPa
FORM	
INTRVL	m
	m
	m
PERF ☐	OPEN HOLE ☐

INITIAL OIL RECORD

INTERVAL	FLOW	DENSITY
–		
–		
–		
–		
–		

LOGGING RECORD

INTERVAL	TYPE	COMPANY
–		
–		
–		
–		
–		
–		

REMARKS

No samples - core only

Depths measured relative to ground level (KB-GL)

INITIAL WATER RECORD

INTERVAL	STAT LEV	TYPE
30 –		
130 –		SWL
140 –		
–		
–		
–		

CEMENT RECORD

INTERVAL	LOCATION	MD	mm
47 – 225	PBL		
225 – 462			
–			
–			
–			

GEOLOGICAL CONTACTS	TOP	ELEV	THICK
KB / GROUND LEVEL	0.0		
DRIFT / BEDROCK SURFACE	0.0		
PORT LAMBTON			
KETTLE POINT			
HAMILTON			
MARCELLUS			
DUNDEE			
COLUMBUS			
LUCAS			
AMHERSTBURG			
SYLVANIA			
BOIS BLANC			
SPRINGVALE			
ORISKANY			
BASS ISLANDS			
G SHALE			
F SHALE			
F SALT			
E CARBONATE			
D SALT/EQUIVALENT			
C SHALE			
B MARKER			
B EQUIVALENT			
B SALT			
B ANHYDRITE			
A2 CARBONATE			
A2 SALT			
A2 ANHYDRITE			
A1 CARBONATE			
A1 SALT			
A1 ANHYDRITE			
GUELPH			
ERAMOSA			
GOAT ISLAND			
GASPORT/MANITOU			
DECEW			
ROCHESTER			
IRONDEQUOIT			
REYNALES/FOSSIL HILL			
THOROLD			
GRIMSBY			
CABOT HEAD			
MANITOULIN			
WHIRLPOOL			
QUEENSTON			
BLUE MOUNTAIN - GEORG BAY			
COLLINGWOOD			
COBOURG			
VERULAM			
KIRKFIELD			
COBOCONK			
GULL RIVER			
SHADOW LAKE			
CAMBRIAN			
PRECAMBRIAN			

GEOLOGY BY T.R. Carter

T.R. Carter

CTY Baldimand TWP Lake Erie BLK 19 TRAC E LOT CON

WELL NAME Place Lake Erie 19-E PERMIT 7160 WELL CLASS DEV

OPERATOR Place Resources Corporation TARGET CLI CUR STATUS CS-ABD

DRILLING DATA

CONTRACTOR Place Resources Corporation
RIG TYPE Cable
CABLE TOP 7.3 KB ELEV 176.7
BOT 256.0 LOGGER
ROTRY TOP DRILLER 256.0
BOT DEEP END
DRLG FLD PLUG BK

DATES

PERMIT 1987-07-17
SPUD 1987-07-16
COMPTD 1987-08-05
OFFCNF 1987-09-04
WRNOVR
ABNDND 1987-08-13

COORDINATES

NORTH m
SOUTH m
EAST m
WEST m
LAT 42 49 05
LONG 79 49 55

SAMPLES

TOP 7.3
BOT 255.7
TRAV 4259

INITIAL GAS RECORD

INTERVAL	FLOW	SIP
–		
–		
–		
–		
–		
–		

CASING AND TUBING RECORD

DIAM	WEIGHT	SET AT	HOW SET	RECOV
219	35.7	7.9	SBO	7.9
114	14.1	235.9	PAC	235.9

COMPLETION DATA

GAS 10³m³/d
OIL m³/d
SIP kPa
FORM
INTRVL m
m
m

INITIAL OIL RECORD

INTERVAL	FLOW	DENSITY
–		
–		
–		
–		
–		

LOGGING RECORD

INTERVAL	TYPE	COMPANY
–		
–		
–		
–		
–		
–		

PERF ☐ OPEN HOLE ☐

REMARKS

INITIAL WATER RECORD

INTERVAL	STAT LEV	TYPE
12.5 –		FRE
79.0 –		SUL
–		
–		
–		
–		

CORING RECORD

INTERVAL	LOCATION	MD	mm
–			
–			
–			
–			
–			

GEOLOGICAL CONTACTS	TOP	ELEV	THICK
KB / [illegible]	3.4		
DRIFT / [illegible]	7.3		
PORT LAMBTON			
KETTLE POINT			
HAMILTON			
MARCELLUS			
DUNDEE			
COLUMBUS			
LUCAS			
AMHERSTBURG	7.3		
SYLVANIA			
BOIS BLANC	13.1		
SPRINGVALE			
ORISKANY			
BASS ISLANDS	31.0		
G SHALE	41.5		
F SHALE	45.4		
F SALT			
E CARBONATE	79.0		
D SALTEQUIVALENT			
C SHALE	102.7		
B MARKER	116.0		
B EQUIVALENT	120.0		
B SALT			
B ANHYDRITE	126.2		
A2 CARBONATE	129.8		
A2 SALT			
A2 ANHYDRITE			
A1 CARBONATE	141.1		
A1 SALT			
A1 ANHYDRITE			
GUELPH	148.4		
ERAMOSA			
GOAT ISLAND			
GASPORT/WARREN			
DECEW	205.0		
ROCHESTER	221.0		
IRONDEQUOIT	235.0		
REYNALES/[illegible]	236.8		
THOROLD	240.0		
GRIMSBY	244.8		
CABOT HEAD			
MANITOULIN			
WHIRLPOOL			
QUEENSTON			
BLUE MOUNTAIN - GEORG BAY			
COLLINGWOOD			
COBOURG			
VERULAM			
KIRKFIELD			
COBOCONK			
GULL RIVER			
SHADOW LAKE			
CAMBRIAN			
PRECAMBRIAN			

GEOLOGY BY T.R. Carter

CTY Baldimand TWP Lake Erie BLK 91 TRAC B LOT CON

WELL NAME Wigeon Lake Erie 91-B-2 PERMIT 7140 WELL CLASS DEV

OPERATOR Place Resources Corporation TARGET CLI CUR STATUS CP

DRILLING DATA

CONTRACTOR Place Resources Corporation
RIG TYPE Cable
CABLE TOP 0.0 KB ELEV 174.7
BOT 452.5 LOGGER 451.7
ROTRY TOP DRILLER 453.5
BOT DEEP END
DRLG FLD PLUG BK

DATES

PERMIT 1987-04-30
SPUD 1987-04-20
COMPTD 1987-05-28
OFFCNF 1987-06-27
WRNOVR
ABNDND

COORDINATES

NORTH m
SOUTH m
EAST m
WEST m
LAT 42 33 45
LONG 80 12 45

SAMPLES

TOP 105.5
BOT 452.9
TRAV 7270

INITIAL GAS RECORD

INTERVAL	FLOW	SIP
414.5 – 415.1	2.125	
–		
–		
–		
–		
–		

CASING AND TUBING RECORD

DIAM	WEIGHT	SET AT	HOW SET	RECOV
273	62.5	105.5	BAR	0
219	35.7	114.3	BAR	0
114	14.1	406.3	PAC	0

COMPLETION DATA

GAS 2.125 10³m³/d
OIL m³/d
SIP kPa
FORM Grimsby
INTRVL m
m
m

INITIAL OIL RECORD

INTERVAL	FLOW	DENSITY
–		
–		
–		
–		
–		

LOGGING RECORD

INTERVAL	TYPE	COMPANY
0 – 451.7	GRPL	Computalog
405.7 – 451.7	DEPL	"
–		
–		
–		
–		

PERF ☐ OPEN HOLE ☐

REMARKS

INITIAL WATER RECORD

INTERVAL	STAT LEV	TYPE
106.7 –		FRE
131.1 –		SUL
–		
–		
–		
–		

CORING RECORD

INTERVAL	LOCATION	MD	mm
–			
–			
–			
–			
–			

GEOLOGICAL CONTACTS	TOP	ELEV	THICK
KB / [illegible]	0.0		
DRIFT / [illegible]	0.0		
PORT LAMBTON			
KETTLE POINT			
HAMILTON			
MARCELLUS			
DUNDEE	105.5		
COLUMBUS			
LUCAS			
AMHERSTBURG	125.0		
SYLVANIA			
BOIS BLANC	149.4		
SPRINGVALE			
ORISKANY			
BASS ISLANDS	160.5		
G SHALE	192.0		
F SHALE	198.7		
F SALT			
E CARBONATE	235.0		
D SALTEQUIVALENT			
C SHALE	257.9		
B MARKER	266.7		
B EQUIVALENT	272.2		
B SALT			
B ANHYDRITE	280.1		
A2 CARBONATE	283.8		
A2 SALT			
A2 ANHYDRITE			
A1 CARBONATE			
A1 SALT			
A1 ANHYDRITE			
GUELPH	296.9		
ERAMOSA			
GOAT ISLAND			
GASPORT/WARREN			
DECEW	368.8		
ROCHESTER	393.5		
IRONDEQUOIT	402.6		
REYNALES/[illegible]	403.6		
THOROLD	406.0		
GRIMSBY	411.0		
CABOT HEAD	422.5		
MANITOULIN			
WHIRLPOOL	447.0		
QUEENSTON	450.2		
BLUE MOUNTAIN - GEORG BAY			
COLLINGWOOD			
COBOURG			
VERULAM			
KIRKFIELD			
COBOCONK			
GULL RIVER			
SHADOW LAKE			
CAMBRIAN			
PRECAMBRIAN			

GEOLOGY BY T.R. Carter

CTY Huron TWP Goderich BLK TRAC 1 LOT 21 CON Bayfield

WELL NAME Ovenbrook et al 1 Goderich 1-21-Bayfield PERMIT 7179 ENT CLASS WFV

OPERATOR Paladin Petroleum Corporation TARGET SAL CUR STATUS DH-ABD

DRILLING DATA

CONTRACTOR Rawlings Drilling Company

RIG TYPE Cable DEPTHS

CABLE TOP 1.5 KB ELEV 54.0

BOT 598.0 LOGGER 599.0

ROTRY TOP DRILLER 598.0

BOT DEEP END

DRLD FLD PLUG BK

DATES

PERMIT 1987-08-26

SPUD 1987-09-21

COMPTD 1987-10-20

OFFCNF 1988-10-20

WRNOVR

ABNDND 1987-10-30

COORDINATES

NORTH m

SOUTH 143.8 m

EAST m

WEST 143.9 m

LAT 43 34 08

LONG 81 26 53

SAMPLES

TOP 319.1

BOT 598.0

TRAV 9297

INITIAL GAS RECORD

INTERVAL	FLOW	SIP
–		
–		
–		
–		
–		
–		

CASING AND TUBING RECORD

DIAM	WEIGHT	SET AT	HOW SET	RECOV
340	76	53.0	SHO	53.0
273	60	75.0	SHO	65.0
219	40	128.0	SHO	128.0
178	30	319.1	PAC	309.4

COMPLETION DATA

GAS 10³m³/d

OIL m³/d

SIP kPa

FORM

INTRVL m

m

m

INITIAL OIL RECORD

INTERVAL	FLOW	DENSITY
–		
–		
–		
–		
–		

LOGGING RECORD

INTERVAL	TYPE	COMPANY
12.0 – 589.0	GRL	SCH
12.0 – 598.5	CNFD	"
12.0 – 598.5	LATL	"
12.0 – 598.5	MSFL	"
–		
–		

PERF ☐ OPEN HOLE ☐

REMARKS

A-2 Shale at 507.0

No samples above 319.1

INITIAL WATER RECORD

INTERVAL	STAT LEV	TYPE
64 –	60.9	FRE
100.5 –	61.0	SUL
131.1 –	60.0	SUL
–		
–		
–		

CORING RECORD

INTERVAL	LOCATION	NO	rec.
–			
–			
–			
–			
–			
–			

GEOLOGICAL CONTACTS	TOP	ELEV	THICK
KB / GROUND LEVEL	0.0		
DRIFT / BEDROCK SURFACE	1.5		
DEVONIAN: PORT LAMBTON			
KETTLE POINT			
HAMILTON			
MARCELLUS			
DUNDEE	49.4		
COLUMBUS			
LUCAS	60.0		
AMHERSTBURG	138.7		
SYLVANIA			
BOIS BLANC	175.7		
SPRINGVALE			
ORISKANY			
SILURIAN: BASS ISLANDS	235.5		
G SHALE	285.2		
F SHALE	292.8		
F SALT			
E CARBONATE	336.7		
D SALT/BRINEBACHER	359.8		
C SHALE	376.5		
B MARKER	391.8		
B EQUIVALENT			
B SALT	398.6		
B ANHYDRITE	476.6		
A2 CARBONATE	487.0		
A2 SALT	515.3		
A2 ANHYDRITE	530.0		
A1 CARBONATE	534.0		
A1 SALT			
A1 ANHYDRITE	567.8		
GUELPH	572.8		
ERAMOSA			
GOAT ISLAND	580.1		
GASPORT/MANITOULIN	589.3		
DECEW			
ROCHESTER	596.0		
IRONDEQUOIT			
CABOT HEAD/FOSSIL HILL	598.0		
THOROLD			
GRIMSBY			
CABOT HEAD			
MANITOULIN			
WHIRLPOOL			
ORDOVICIAN: QUEENSTON			
BLUE MOUNTAIN - GEORG. BAY			
COLLINGWOOD			
COBOURG			
VERULAM			
KIRKFIELD			
COBOCONK			
GULL RIVER			
SHADOW LAKE			
CAMBRIAN			
PRECAMBRIAN			

GEOLOGY BY T.R. Carter

CTY Huron TWP Stanley BLK TRAC 2 LOT 18 CON 7

WELL NAME Florentine et al 2 Stanley 2-18-X PERMIT 7136 ENT CLASS WFV

OPERATOR Paladin Petroleum Corporation TARGET SAL CUR STATUS GS-ABD

DRILLING DATA

CONTRACTOR Rawlings Drilling Company Ltd

RIG TYPE Cable DEPTHS

CABLE TOP 1.5 KB ELEV 271.8

BOT 614.2 LOGGER 613.5

ROTRY TOP DRILLER 614.2

BOT DEEP END

DRLD FLD PLUG BK

DATES

PERMIT 1987-04-13

SPUD 1987-04-23

COMPTD 1987-06-15

OFFCNF 1988-06-15

WRNOVR

ABNDND

COORDINATES

NORTH 107.7 m

SOUTH m

EAST 610.6 m

WEST m

LAT 43 31 16

LONG 81 30 16

SAMPLES

TOP 78.6

BOT 614.5

TRAV 9721

INITIAL GAS RECORD

INTERVAL	FLOW	SIP
568.5 – 571.5		344.7
–		
–		
–		
–		
–		

CASING AND TUBING RECORD

DIAM	WEIGHT	SET AT	HOW SET	RECOV
339	76	78.7	SHO	-
273	60	89.8	SHO	
219	40	178.2	SHO	
178	30	324.6	PAC	

COMPLETION DATA

GAS 10³m³/d

OIL m³/d

SIP kPa

FORM

INTRVL m

m

m

INITIAL OIL RECORD

INTERVAL	FLOW	DENSITY
–		
–		
–		
–		
–		

LOGGING RECORD

INTERVAL	TYPE	COMPANY
20 – 613	GRL	SCH
20 – 613	CNFD	"
325.1 – 613.4	LATL	"
325.1 – 613.4	MSFL	"
325.5 – 613	CBLF	"
–		
–		

PERF ☐ OPEN HOLE ☐

REMARKS

A-2 Shale at 568.0

INITIAL WATER RECORD

INTERVAL	STAT LEV	TYPE
35 –	25	FRE
86.5 –	76.2	FRE
131.0 –	76	SUL
–		
–		
–		

CORING RECORD

INTERVAL	LOCATION	NO	rec.
–			
–			
–			
–			
–			
–			

GEOLOGICAL CONTACTS	TOP	ELEV	THICK
KB / GROUND LEVEL	0.0		
DRIFT / BEDROCK SURFACE	1.5		
DEVONIAN: PORT LAMBTON			
KETTLE POINT			
HAMILTON			
MARCELLUS			
DUNDEE	70.8		
COLUMBUS			
LUCAS	80.0		
AMHERSTBURG	140.8		
SYLVANIA			
BOIS BLANC	194.8		
SPRINGVALE			
ORISKANY			
SILURIAN: BASS ISLANDS	236.0		
G SHALE	281.1		
F SHALE	289.8		
F SALT			
E CARBONATE	338.0		
D SALT/BRINEBACHER	362.8		
C SHALE	377.8		
B MARKER	396.2		
B EQUIVALENT			
B SALT	400.8		
B ANHYDRITE			
A2 CARBONATE	477.7		
A2 SALT	517.0		
A2 ANHYDRITE	536.0		
A1 CARBONATE	538.3		
A1 SALT			
A1 ANHYDRITE	574.3		
GUELPH	579.0		
ERAMOSA			
GOAT ISLAND	587.0		
GASPORT/MANITOULIN	597.2		
DECEW			
ROCHESTER	601.3		
IRONDEQUOIT			
CABOT HEAD/FOSSIL HILL	603.0		
THOROLD			
GRIMSBY	608.0		
CABOT HEAD			
MANITOULIN			
WHIRLPOOL			
ORDOVICIAN: QUEENSTON			
BLUE MOUNTAIN - GEORG. BAY			
COLLINGWOOD			
COBOURG			
VERULAM			
KIRKFIELD			
COBOCONK			
GULL RIVER			
SHADOW LAKE			
CAMBRIAN			
PRECAMBRIAN			

GEOLOGY BY T.R. Carter

T.R. Carter

CTY Huron TWP Stanley BLK TRAC 3 LOT 20 CON XI

WELL NAME Florentine et al 1 Stanley 3-20-XI PERMIT 7104 INIT CLASS RFW

OPERATOR Paladin Petroleum Corporation TARGET SAL CUR STATUS DD-ABD

DRILLING DATA

CONTRACTOR Rawlings Drilling Co.

RIG TYPE Cable DEPTHS

CABLE TOP 1.5 KB ELEV 251.5

BOT 613.5 LOGGER 613.7

ROTRY TOP DRILLER 613.5

BOT DEEP END

DRLG FLD PLUG BK

DATES

PERMIT 1987-01-23

SPUD 1987-02-02

COMPTD 1987-03-27

OFFCHP 1988-03-27

WINDWR

ABNDND 1988-04-01

COORDINATES

NORTH 107.7 m

SOUTH m

EAST m

WEST 610.6 m

LAT 43 31 36

LONG 81 39 15

SAMPLES

TOP 71.9

BOT 614.2

TRMY 9720

INITIAL GAS RECORD

INTERVAL	FLOW	SIP
575.4 - 582.0	SHOW	
–		
–		
–		
–		
–		

CASING AND TUBING RECORD

DIAM	WEIGHT	SET AT	HOW SET	RECOV
340	76	64.6	SHO	64.6
273	60	85.9	SHO	85.9
219		176.3	PAC	
178	30	291.6	SHO	282

COMPLETION DATA

GAS 10 m^3/d

OIL m^3/d

SIP kPa

FORM

INTVAL m

m

m

INITIAL OIL RECORD

INTERVAL	FLOW	DENSITY
–		
–		
–		
–		
–		

LOGGING RECORD

INTERVAL	TYPE	COMPANY
20 – 603	GRL	SCH
20 – 612	CNFD	"
365.0 – 613.5	LATL	"
365.0 – 613.5	MSFL	"
350.0 – 612.0	DIFM	"
20 – 613.0	MCRS	"
–		

FDRV ☐ OPEN HOLE ☐

REMARKS

A-2 Shale at 508.0

No samples from 87.5 to 90.5

INITIAL WATER RECORD

INTERVAL	STAT LEV	TYPE
75 –	61	FRE
154 –	61	SUL
325 –		SAL
–		
–		
–		

CORING RECORD

INTERVAL	LOCATION	NO	rec
–			
–			
–			

GEOLOGICAL CONTACTS

		TOP	ELEV	THICK
	KB / [illegible]	0.0		
	DRIFT / [illegible]	1.5		
DEVONIAN	PORT LAMBTON			
	KETTLE POINT			
	HAMILTON			
	MARCELLUS			
	DUNDEE	71.6		
	COLUMBUS			
	LUCAS	99.3		
	AMHERSTBURG	131.1		
	SYLVANIA			
	BOIS BLANC	191.9		
	SPRINGVALE			
	ORISKANY			
SILURIAN	BASS ISLANDS	221.6		
	G SHALE	271.9		
	F SHALE	279.5		
	F SALT			
	E CARBONATE	329.6		
	D SALT/EQUIVALENT	334.0		
	C SHALE	349.3		
	B MARKER	386.3		
	B EQUIVALENT			
	B SALT	393.0		
	B ANHYDRITE			
	A2 CARBONATE	471.7		
	A2 SALT	519.1		
	A2 ANHYDRITE	531.3		
	A1 CARBONATE	533.2		
	A1 SALT			
	A1 ANHYDRITE	569.8		
ORDOVICIAN	GUELPH	575.3		
	ERAMOSA			
	GOAT ISLAND	582.4		
	GASPORT/MANITOU	591.4		
	DECEW			
	ROCHESTER	596.0		
	IRONDEQUOIT			
	REYNALES/FOSSIL HILL	600.2		
	THOROLD			
	GRIMSBY			
	CABOT HEAD	603.5		
	MANITOULIN			
	WHIRLPOOL			
CAMBRIAN	QUEENSTON			
	BLUE MOUNTAIN - GEORG. BAY			
	COLLINGWOOD			
	COBOURG			
	VERULAM			
	KIRKFIELD			
	COBOCONK			
	GULL RIVER			
	SHADOW LAKE			
CAMBRIAN				
PRECAMBRIAN				

GEOLOGY BY T.R. Carter

CTY East TWP Camden BLK TRAC 9 LOT 1 CON II Gore

WELL NAME Thundervalley 1 Camden Gore 8-1-II PERMIT 7105 INIT CLASS RFW

OPERATOR Paladin Petroleum Corporation TARGET SAL CUR STATUS DD-ABD

DRILLING DATA

CONTRACTOR Rawlings Drilling Co.

RIG TYPE Cable DEPTHS

CABLE TOP 1.5 KB ELEV 181.5

BOT 573.0 LOGGER 571.5

ROTRY TOP DRILLER 573.0

BOT DEEP END

DRLG FLD PLUG BK

DATES

PERMIT 1987-01-27

SPUD 1987-01-28

COMPTD 1987-02-28

OFFCHP 1988-02-28

WINDWR

ABNDND 1987-03-05

COORDINATES

NORTH 150.9 m

SOUTH m

EAST 167.6 m

WEST m

LAT 42 34 36

LONG 82 13 45

SAMPLES

TOP 16.8

BOT 573.0

TRMY 9602

INITIAL GAS RECORD

INTERVAL	FLOW	SIP
440 – 450	SHOW	
516 – 517	SHOW	
–		
–		
–		
–		

CASING AND TUBING RECORD

DIAM	WEIGHT	SET AT	HOW SET	RECOV
273	76	18.9	DRO	18.9
219	54	143.3	DRO	143.3
178	36	350.1	B&C	348.2

COMPLETION DATA

GAS 10 m^3/d

OIL m^3/d

SIP kPa

FORM

INTVAL m

m

m

INITIAL OIL RECORD

INTERVAL	FLOW	DENSITY
488 – 490	SHOW	
516 – 517	0.2	
–		
–		
–		
–		

LOGGING RECORD

INTERVAL	TYPE	COMPANY
50 – 571	GRL	SCH
50 – 571	CNFD	"
350 – 571	LATL	"
350 – 571	MSFL	"
–		
–		
–		

FDRV ☐ OPEN HOLE ☐

REMARKS

A-2 Shale at 477.0

INITIAL WATER RECORD

INTERVAL	STAT LEV	TYPE
164 – 167	45	SUL
517 –		SAL
562 –	451	SAL
–		
–		
–		

CORING RECORD

INTERVAL	LOCATION	NO	rec
–			
–			
–			

GEOLOGICAL CONTACTS

		TOP	ELEV	THICK
	KB / [illegible]	0.0		
	DRIFT / [illegible]	1.5		
DEVONIAN	PORT LAMBTON			
	KETTLE POINT	18.0		
	HAMILTON	81.0		
	MARCELLUS			
	DUNDEE	160.0		
	COLUMBUS	179.8		
	LUCAS	184.1		
	AMHERSTBURG	234.7		
	SYLVANIA			
	BOIS BLANC	269.8		
	SPRINGVALE			
	ORISKANY			
SILURIAN	BASS ISLANDS	302.4		
	G SHALE	335.1		
	F SHALE	341.5		
	F SALT			
	E CARBONATE	385.0		
	D SALT/EQUIVALENT			
	C SHALE	414.0		
	B MARKER	429.1		
	B EQUIVALENT	434.9		
	B SALT			
	B ANHYDRITE	442.9		
	A2 CARBONATE	447.5		
	A2 SALT			
	A2 ANHYDRITE	483.9		
	A1 CARBONATE	486.5		
	A1 SALT			
	A1 ANHYDRITE			
ORDOVICIAN	GUELPH	513.6		
	ERAMOSA			
	GOAT ISLAND	529.4		
	GASPORT/MANITOU	552.5		
	DECEW			
	ROCHESTER	570.0		
	IRONDEQUOIT			
	REYNALES/FOSSIL HILL			
	THOROLD			
	GRIMSBY			
	CABOT HEAD			
	MANITOULIN			
	WHIRLPOOL			
CAMBRIAN	QUEENSTON			
	BLUE MOUNTAIN - GEORG. BAY			
	COLLINGWOOD			
	COBOURG			
	VERULAM			
	KIRKFIELD			
	COBOCONK			
	GULL RIVER			
	SHADOW LAKE			
CAMBRIAN				
PRECAMBRIAN				

GEOLOGY BY T.R. Carter

CTY Kent TWP Camden BLK TRAC 2-7 LOT 1 CON XI Gore

WELL NAME Pennzoil Wabash #1 Camden Gore 2-7-1-XI PERMIT 7171 INT CLASS NFW

OPERATOR Pennzoil Explorers Ltd TARGET DEV CUR STATUS DD-ABD

DRILLING DATA

CONTRACTOR Charles Stevenson Drilling Ltd
RIG TYPE Cable DEPTHS
CABLE TOP 3.5 KB ELEV 188.5
BOT 155.4 LOGGER
ROTARY TOP DRILLER 155.4
BOT DEEP END
DRLG FLD PLUG BK

DATES

PERMIT 1987-08-11
SPUD
COMPTD
OFFCAP
ABANDND 1987-08-20

COORDINATES

NORTH m
SOUTH 69.2 m
EAST 272.8 m
WEST m
LAT 42 34 33
LONG 82 04 34

SAMPLES

TOP 11.9
BOT 155.4
TRMP 7936

INITIAL GAS RECORD

INTERVAL	FLOW	BP
–		
–		
–		
–		
–		

CASING AND TUBING RECORD

DIAM	WEIGHT	SET AT	HOW SET	RECOV
216	35.7	12	SWD	12
177	25.3	129.5	SWD	129.5

COMPLETION DATA

GAS e³m³/d
OIL m³/d
BP kPa
FORM
INTVL m
m
m

INITIAL OIL RECORD

INTERVAL	FLOW	DENSITY
–		
–		
–		
–		
–		

LOGGING RECORD

INTERVAL	TYPE	COMPANY
–		
–		
–		
–		
–		

PERF ☐ OPEN HOLE ☐

REMARKS

INITIAL WATER RECORD

INTERVAL	STAT LEV	TYPE
11.5 –	0	FRE
152 –	6	SAL
134.4 – 136.9		FRE
–		
–		
–		

CORING RECORD

INTERVAL	LOCATION	NO	rec.
–			
–			
–			
–			

GEOLOGICAL CONTACTS

	TOP	ELEV	THICK
KB / SURFACE DEVEL	0.0		
DRIFT / SURFACE BEDROCK	3.5		
PORT LAMBTON			
KETTLE POINT	11.5		
HAMILTON	50.3		
MARCELLUS			
DUNDEE	129.0		
COLUMBUS			
LUCAS	152.4		
AMHERSTBURG			
SYLVANIA			
BOIS BLANC			
SPRINGVALE			
CRESKANY			
BASS ISLANDS			
G SHALE			
F SHALE			
F SALT			
E CARBONATE			
D SALT/EQUIVALENT			
C SHALE			
B MARKER			
B EQUIVALENT			
B SALT			
B ANHYDRITE			
A2 CARBONATE			
A2 SALT			
A1 ANHYDRITE			
A1 CARBONATE			
A1 SALT			
ANHYDRITE			
DULUTH			
ERAMOSA			
GOAT ISLAND			
GASPORT/MANITOU			
DECEW			
ROCHESTER			
PROBESCIOT			
REYNALES/FOSSIL HILL			
THOROLD			
GRIMSBY			
CABOT HEAD			
MANITOULIN			
WHIRLPOOL			
QUEENSTON			
BLUE MOUNTAIN - GEORG BAY			
COLLINGWOOD			
COBOURG			
VERULAM			
KIRKFIELD			
COBOCONK			
GULL RIVER			
SHADOW LAKE			
CAMBRIAN			
PRECAMBRIAN			

GEOLOGY BY T.R. Carter

CTY Kent TWP Camden BLK TRAC 8 LOT 2 CON XII Gore

WELL NAME Pennzoil Wabash #2 Camden Gore 8-2-XII PERMIT 7184 INT CLASS NFW

OPERATOR Pennzoil Explorers Ltd TARGET DEV CUR STATUS DD-ABD

DRILLING DATA

CONTRACTOR Charles Stevenson Drilling Ltd
RIG TYPE Cable DEPTHS
CABLE TOP 0.3 KB ELEV 185.4
BOT 129.2 LOGGER
ROTARY TOP DRILLER 129.2
BOT DEEP END
DRLG FLD PLUG BK

DATES

PERMIT 1987-08-31
SPUD 1987-09-03
COMPTD 1987-09-16
OFFCAP 1988-09-16
ABANDND 1987-09-19

COORDINATES

NORTH 226.0 m
SOUTH m
EAST 75.0 m
WEST m
LAT 42 34 41
LONG 82 03 45

SAMPLES

TOP 11.9
BOT 129.2
TRMP 5520

INITIAL GAS RECORD

INTERVAL	FLOW	BP
–		
–		
–		
–		
–		

CASING AND TUBING RECORD

DIAM	WEIGHT	SET AT	HOW SET	RECOV
216	35.9	12.9	SWD	12.9
177	25.3	94.5	SWD	94.5

COMPLETION DATA

GAS e³m³/d
OIL m³/d
BP kPa
FORM
INTVL m
m
m

INITIAL OIL RECORD

INTERVAL	FLOW	DENSITY
94.5 – 100.6		
–		
–		
–		
–		

LOGGING RECORD

INTERVAL	TYPE	COMPANY
–		
–		
–		
–		
–		

PERF ☐ OPEN HOLE ☐

REMARKS

INITIAL WATER RECORD

INTERVAL	STAT LEV	TYPE
11.5 – 11.8	0	FRE
94.5 – 100.6	61	SAL
127.7 –	35	FRE
–		
–		
–		

CORING RECORD

INTERVAL	LOCATION	NO	rec.
–			
–			
–			
–			

GEOLOGICAL CONTACTS

	TOP	ELEV	THICK
KB / SURFACE DEVEL	0.0		
DRIFT / SURFACE BEDROCK	0.3		
PORT LAMBTON			
KETTLE POINT	13.7		
HAMILTON	15.8		
MARCELLUS			
DUNDEE	92.6		
COLUMBUS	125.5		
LUCAS			
AMHERSTBURG			
SYLVANIA			
BOIS BLANC			
SPRINGVALE			
CRESKANY			
BASS ISLANDS			
G SHALE			
F SHALE			
F SALT			
E CARBONATE			
D SALT/EQUIVALENT			
C SHALE			
B MARKER			
B EQUIVALENT			
B SALT			
B ANHYDRITE			
A2 CARBONATE			
A2 SALT			
A1 ANHYDRITE			
A1 CARBONATE			
A1 SALT			
ANHYDRITE			
DULUTH			
ERAMOSA			
GOAT ISLAND			
GASPORT/MANITOU			
DECEW			
ROCHESTER			
PROBESCIOT			
REYNALES/FOSSIL HILL			
THOROLD			
GRIMSBY			
CABOT HEAD			
MANITOULIN			
WHIRLPOOL			
QUEENSTON			
BLUE MOUNTAIN - GEORG BAY			
COLLINGWOOD			
COBOURG			
VERULAM			
KIRKFIELD			
COBOCONK			
GULL RIVER			
SHADOW LAKE			
CAMBRIAN			
PRECAMBRIAN			

GEOLOGY BY T.R. Carter

T.R. Carter

CTY East TWP Camden BLK TRAC 2-1 LOT 9 CON II

WELL NAME J. Weston 1 Camden 2-1-9-II PERMIT 7099 DRT CLASS RTV

OPERATOR John Weston TARGET DEV CUR STATUS 30-ABD

DRILLING DATA

CONTRACTOR Circle A Drilling

RIG TYPE Cable DEPTHS

CABLE TOP 0.0 KB ELEV 180.0

BOT 120.3 LOGGED

ROTRY TOP DRILLER 120.3

BOT DEEP END

DRLG FLD PLUG BK

DATES

PERMIT 1986-12-29

SPUD 1986-12-31

COMPTD 1987-02-15

OFFCMP

WRKOVR

ABNDND 1987-02-27

COORDINATES

NORTH m

SOUTH 155.5 m

EAST m

WEST 160.9 m

LAT 42 33 50

LONG 82 02 48

SAMPLES

TOP 19.8

BOT 127.1

TRAV 2989

INITIAL GAS RECORD

INTERVAL	FLOW	BP
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--		
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CASING AND TUBING RECORD

DIAM	WEIGHT	SET AT	HOW SET	RECOV
219		5.5	SHO	5.5
178		21.6	SHO	21.6
114		90.8	PAC	90.8

COMPLETION DATA

GAS 10^3m^3/d

OIL m^3/d

BP kPa

FORM

INTVL m

m

m

PERF ☐ OPEN HOLE ☐

REMARKS

INITIAL OIL RECORD

INTERVAL	FLOW	DENSITY
108.2 - 111.1	SHOW	
--		
--		
--		
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--		

LOGGING RECORD

INTERVAL	TYPE	COMPANY
--		
--		
--		
--		
--		
--		

INITIAL WATER RECORD

INTERVAL	STAT LEV	TYPE
19.8 - 21.6		FRE
24.6 --		
--		
--		
--		
--		

CORING RECORD

INTERVAL	LOCATION	NO	rec
--			
--			
--			
--			
--			
--			

GEOLOGICAL CONTACTS	TOP	ELEV	THICK
KB / SURVEYING	0.0		
DRFT / SURVEYING	0.8		
PORT LAMBTON			
KETTLE POINT			
HAMILTON	19.8		
MARCELLUS			
DUNDEE	90.8		
COLUMBUS	125.0		
LUCAS			
AMHERSTBURG			
SYLVANIA			
BOIS BLANC			
SPRINGVALE			
ORISKANY			
BASS ISLANDS			
G SHALE			
F SHALE			
F SALT			
E CARBONATE			
D SALT/EQUIVALENT			
C SHALE			
B MARKER			
B EQUIVALENT			
B SALT			
B ANHYDRITE			
A2 CARBONATE			
A2 SALT			
A2 ANHYDRITE			
A1 CARBONATE			
A1 SALT			
A1 ANHYDRITE			
GUELPH			
ERAMOSA			
GOAT ISLAND			
GASPORT/MANITOU			
DECEW			
ROCHESTER			
IRONDEQUOIT			
REYNALES/FOSSIL HILL			
THOROLD			
GRIMSBY			
CABOT HEAD			
MANITOULIN			
WHIRLPOOL			
QUEENSTON			
BLUE MOUNTAIN - GEORG. BAY			
COLLINGWOOD			
COBOURG			
VERULAM			
KIRKFIELD			
COBOCONK			
GULL RIVER			
SHADOW LAKE			
GAMBRIAN			
PRECAMBRIAN			

GEOLOGY BY T.R. Carter

CTY East TWP Chatham BLK TRAC 5 LOT 10 CON XIII

WELL NAME Francisco et al 7 Chatham 5-10-XIII PERMIT 7130 DRT CLASS DEV

OPERATOR Francisco Petroleum Enterprises Inc. TARGET SAL CUR STATUS OPCO

DRILLING DATA

CONTRACTOR Bowlings Drilling Company Ltd

RIG TYPE Cable DEPTHS

CABLE TOP 1.2 KB ELEV 179.4

BOT 500.2 LOGGED 498.0

ROTRY TOP DRILLER 500.2

BOT DEEP END

DRLG FLD PLUG BK

DATES

PERMIT 1987-06-16

SPUD 1987-05-04

COMPTD 1987-06-03

OFFCMP 1987-07-03

WRKOVR

ABNDND

COORDINATES

NORTH m

SOUTH 777.2 m

EAST m

WEST 152.4 m

LAT 42 33 33

LONG 82 16 35

SAMPLES

TOP 18.3

BOT 500.2

TRAV 8736

INITIAL GAS RECORD

INTERVAL	FLOW	BP
486.2 - 488.6		
--		
--		
--		
--		
--		

CASING AND TUBING RECORD

DIAM	WEIGHT	SET AT	HOW SET	RECOV
273	59.5	19.8	SHO	0
219	35.7	138.7	SHO	0
178	29.8	381.0	PAC	350.5
114		499.6	CEM	0

COMPLETION DATA

GAS 10^3m^3/d

OIL 0.79 m^3/d

BP kPa

FORM A-1 Carbonate

INTVL 489.2-491.6 m

m

m

PERF ☑ OPEN HOLE ☐

REMARKS

A-2 Shale at 477.9

INITIAL OIL RECORD

INTERVAL	FLOW	DENSITY
488.6 - 491.6	0.79	
--		
--		
--		
--		
--		

LOGGING RECORD

INTERVAL	TYPE	COMPANY
411.5 - 500.2	GR/L	Computalog
--		
--		
--		
--		
--		

INITIAL WATER RECORD

INTERVAL	STAT LEV	TYPE
17.7 --	9.1	FRE
469.6 --	0	SAL
150.5 --	30.5	SUL
--		
--		
--		

CORING RECORD

INTERVAL	LOCATION	NO	rec
--			
--			
--			
--			
--			
--			

GEOLOGICAL CONTACTS	TOP	ELEV	THICK
KB / SURVEYING	0.0		
DRFT / SURVEYING	1.2		
PORT LAMBTON			
KETTLE POINT	18.6		
HAMILTON	79.0		
MARCELLUS			
DUNDEE	136.5		
COLUMBUS	176.0		
LUCAS	182.4		
AMHERSTBURG	227.8		
SYLVANIA			
BOIS BLANC	260.2		
SPRINGVALE			
ORISKANY			
BASS ISLANDS	296.0		
G SHALE	336.0		
F SHALE	342.9		
F SALT			
E CARBONATE	385.0		
D SALT/EQUIVALENT			
C SHALE	415.4		
B MARKER	435.0		
B EQUIVALENT			
B SALT			
B ANHYDRITE	443.8		
A2 CARBONATE	449.0		
A2 SALT			
A2 ANHYDRITE	485.2		
A1 CARBONATE	487.7		
A1 SALT			
A1 ANHYDRITE			
GUELPH			
ERAMOSA			
GOAT ISLAND			
GASPORT/MANITOU			
DECEW			
ROCHESTER			
IRONDEQUOIT			
REYNALES/FOSSIL HILL			
THOROLD			
GRIMSBY			
CABOT HEAD			
MANITOULIN			
WHIRLPOOL			
QUEENSTON			
BLUE MOUNTAIN - GEORG. BAY			
COLLINGWOOD			
COBOURG			
VERULAM			
KIRKFIELD			
COBOCONK			
GULL RIVER			
SHADOW LAKE			
CAMBRIAN			
PRECAMBRIAN			

GEOLOGY BY T.R. Carter

CTY Kent TWP Chatham BLK TRAC 2 LOT 10 CON XIII

WELL NAME Francisco et al 6 Chatham 2-10-XIII PERMIT 7101 INT CLASS DEV

OPERATOR Francisco Petroleum Enterprises Inc. TARGET SAL CUR STATUS DH-ABD

DRILLING DATA		DATES		COORDINATES		SAMPLES
CONTRACTOR	Rawlings Drilling Co. Ltd.	PERMIT	1987-01-19	NORTH m	TOP 20.1	
RIG TYPE	Cable DEPTHS	SPUD	1987-01-21	SOUTH 167.6 m	BOT 564.8	
CABLE TOP 1.2	RB ELEV 180.3	COMPTD	1987-03-20	EAST 150.9 m	TRAV 9437	
BOT 564.8	LOGGED	OPTCAP	1987-04-27	WEST m		
ROTRY TOP	DRILLED 564.8	WRKOVR		LAT 42 33 41		
BOT	DEEP END	ABNDND	1987-04-02	LONG 82 17 03		
DRLG FLD	PLUG BK					

INITIAL GAS RECORD			CASING AND TUBING RECORD					COMPLETION DATA
INTERVAL	FLOW	BP	DIAM	WEIGHT	SET AT	HOW SET	RECOV	GAS 10^3m^3/d
–			273	59.5	20.9	SWD	20.9	OIL m^3/d
–			219	35.7	143.3	SWD	143.3	BP kPa
–			177.8	29.8	361.2	PAC	350.5	FORM
–								INITIAL m
–								m
–								m

INITIAL OIL RECORD			LOGGING RECORD			COMPLETION DATA
INTERVAL	FLOW	DENSITY	INTERVAL	TYPE	COMPANY	POOL ☐ OPEN HOLE ☐
–			–			REMARKS
–			–			A-2 Shale at 480.5
–			–			
–			–			
–			–			

INITIAL WATER RECORD			CORING RECORD			
INTERVAL	STAT LEV	TYPE	INTERVAL	LOCATION	NO	DIA
70.1 –	18.3	FRE	–			
171.3 – 176.3	30.5	SUL	–			
452.0 – 455.7	304.8	SAL	–			
560.8 –		SAL	–			
–			–			
–			–			

GEOLOGICAL CONTACTS	TOP	ELEV	THICK
KB (CASE HEAD)	0.0		
DRFT (CASE BOWL)	1.2		
PORT LAMBTON			
KETTLE POINT	20.1		
HAMILTON	83.1		
MARCELLUS			
DUNDEE	162.0		
COLUMBUS	173.0		
LUCAS	176.0		
AMHERSTBURG	235.3		
SYLVANIA			
BOIS BLANC	273.4		
SPRINGVALE			
ORISKANY			
BASS ISLANDS	297.3		
G SHALE	338.3		
F SHALE	344.4		
F SALT			
E CARBONATE	388.6		
D SALT/EQUIVALENT			
C SHALE			
B MARKER	428.2		
B EQUIVALENT	434.3		
B SALT			
B ANHYDRITE	438.0		
A2 CARBONATE	444.0		
A2 SALT			
A1 ANHYDRITE	488.6		
A1 CARBONATE	491.0		
A1 SALT			
ANHYDRITE	531.0		
GUELPH	534.6		
ERAMOSA			
GOAT ISLAND	540.0		
GASPORT/MANITOU	554.7		
DECEW			
ROCHESTER			
IRONDEQUOT			
REYNALES/FOSSIL HILL			
THOROLD			
GRIMSBY			
CABOT HEAD			
MANITOULIN			
WHIRLPOOL			
QUEENSTON			
BLUE MOUNTAIN - DECEW, ERY			
COLLINGWOOD			
COBOURG			
VERULAM			
KIRKFIELD			
COBOCONK			
GULL RIVER			
SHADOW LAKE			
GAMBRIAN			
PRECAMBRIAN			

GEOLOGIST T.R. Carter

CTY Kent TWP Chatham BLK TRAC 7 LOT 11 CON XIV

WELL NAME Francisco et al 3 Chatham 7-11-XIV PERMIT 7072 INT CLASS DEV

OPERATOR Francisco Petroleum Enterprises Inc. TARGET SAL CUR STATUS DH-ABD

DRILLING DATA		DATES		COORDINATES		SAMPLES
CONTRACTOR	Rawlings Drilling Co.	PERMIT	1986-11-14	NORTH 178.3 m	TOP 20.7	
RIG TYPE	Cable DEPTHS	SPUD	1986-11-24	SOUTH m	BOT 562.4	
CABLE TOP 1.2	RB ELEV 180.3	COMPTD	1987-01-13	EAST 100.8 m	TRAV 9536	
BOT 562.4	LOGGED	OPTCAP	1987-02-12	WEST m		
ROTRY TOP	DRILLED 562.4	WRKOVR		LAT 42 34 03		
BOT	DEEP END	ABNDND	1987-01-15	LONG 82 17 56		
DRLG FLD	PLUG BK					

INITIAL GAS RECORD			CASING AND TUBING RECORD					COMPLETION DATA
INTERVAL	FLOW	BP	DIAM	WEIGHT	SET AT	HOW SET	RECOV	GAS 10^3m^3/d
–			273	59.5	21.3	SWD	21.3	OIL m^3/d
–			219	35.7	144.2	SWD	144.2	BP kPa
–			178	29.8	350.5	PAC	339.9	FORM
–								INITIAL m
–								m
–								m

INITIAL OIL RECORD			LOGGING RECORD			COMPLETION DATA
INTERVAL	FLOW	DENSITY	INTERVAL	TYPE	COMPANY	POOL ☐ OPEN HOLE ☐
–			–			REMARKS
–			–			
–			–			
–			–			
–			–			

INITIAL WATER RECORD			CORING RECORD			
INTERVAL	STAT LEV	TYPE	INTERVAL	LOCATION	NO	DIA
19.8 –		FRE	–			
161.5 –		SUL	–			
457.2 – 458.8		SAL	–			
562.3 –		SAL	–			
–			–			
–			–			

GEOLOGICAL CONTACTS	TOP	ELEV	THICK
KB (CASE HEAD)	0.0		
DRFT (CASE BOWL)	1.2		
PORT LAMBTON			
KETTLE POINT	20.7		
HAMILTON	83.0		
MARCELLUS			
DUNDEE	160.2		
COLUMBUS			
LUCAS	162.0		
AMHERSTBURG	198.1		
SYLVANIA			
BOIS BLANC	273.4		
SPRINGVALE			
ORISKANY			
BASS ISLANDS	301.8		
G SHALE	339.9		
F SHALE	344.4		
F SALT			
E CARBONATE	388.0		
D SALT/EQUIVALENT			
C SHALE	419.7		
B MARKER	426.5		
B EQUIVALENT			
B SALT			
B ANHYDRITE	445.0		
A2 CARBONATE	448.5		
A2 SALT			
A1 ANHYDRITE	491.0		
A1 CARBONATE	492.3		
A1 SALT			
ANHYDRITE	536.0		
GUELPH	537.0		
ERAMOSA			
GOAT ISLAND	546.5		
GASPORT/MANITOU	551.0		
DECEW			
ROCHESTER			
IRONDEQUOT			
REYNALES/FOSSIL HILL			
THOROLD			
GRIMSBY			
CABOT HEAD			
MANITOULIN			
WHIRLPOOL			
QUEENSTON			
BLUE MOUNTAIN - DECEW, ERY			
COLLINGWOOD			
COBOURG			
VERULAM			
KIRKFIELD			
COBOCONK			
GULL RIVER			
SHADOW LAKE			
GAMBRIAN			
PRECAMBRIAN			

GEOLOGIST T.R. Carter

T.R. Carter

CTY Kent TWP Chatham BLK TRAC 3 LOT 14 CON XI
WELL NAME Francisco et al 8 Chatham 3-14-XI PERMIT 7156 INIT CLASS DEV
OPERATOR Francisco Petroleum Enterprises Inc. TARGET SAL CUR STATUS DH-ABD

DRILLING DATA				DATES		COORDINATES			SAMPLES	
CONTRACTOR	Rawlings Drilling Company			PERMIT	1987-07-16	NORTH		m	TOP	20.7
RIG TYPE	Cable	DEPTHS		SPUD	1987-07-20	SOUTH	502.9	m	BOT	533.1
CABLE TOP	1.2	KB ELEV	178.5	COMPTD	1987-11-27	EAST	150.9	m	TRAY	6732
BOT	533.1	LOGGER		OFFCNF	1987-12-26	WEST		m		
ROTRY TOP		DRILLER	533.1	WRKOVR		LAT	42 33 21			
BOT		DEEP END		ABNOND	1987-12-03	LONG	82 14 07			
DRLG FLD		PLUG BK								

INITIAL GAS RECORD

INTERVAL	FLOW	SIP
–		
–		
–		
–		
–		
–		

CASING AND TUBING RECORD

DIAM	WEIGHT	SET AT	HOW SET	RECOV
273		18.0	SHO	18.0
219		131.1	SHO	131.1
178		332.2	PAC	325.8

COMPLETION DATA

GAS	10³m³/d
OIL	m³/d
SIP	kPa
FORM	
INTRVL	m
	m
	m

PERF ☐ OPEN HOLE ☐

INITIAL OIL RECORD

INTERVAL	FLOW	DENSITY
484.6 –	487.1	
–		
–		
–		
–		
–		

LOGGING RECORD

INTERVAL	TYPE	COMPANY
–		
–		
–		
–		
–		
–		

REMARKS

Columbus is mostly carbonate
A-2 Shale at 462.5

INITIAL WATER RECORD

INTERVAL	STAT LEV	TYPE
16.5 –		FRE
155.5 –	27.4	SUL
–		
–		
–		
–		

CORING RECORD

INTERVAL	LOCATION	NO	mm
–			
–			
–			
–			
–			
–			

GEOLOGICAL CONTACTS	TOP	ELEV	THICK
KB / [illegible]	0.0		
DRIFT / [illegible]	1.2		
PORT LAMBTON			
KETTLE POINT	17.4		
HAMILTON	71.0		
MARCELLUS			
DUNDEE	128.0		
COLUMBUS	152.4		
LUCAS	169.2		
AMHERSTBURG	198.1		
SYLVANIA			
BOIS BLANC	244.8		
SPRINGVALE			
ORISKANY			
BASS ISLANDS	274.3		
G SHALE	322.0		
F SHALE	328.0		
F SALT			
E CARBONATE	373.4		
D SALT/EQUIVALENT			
C SHALE	400.8		
B MARKER	416.5		
B EQUIVALENT			
B SALT			
B ANHYDRITE	424.3		
A2 CARBONATE	430.3		
A2 SALT			
A2 ANHYDRITE	467.4		
A1 CARBONATE	468.5		
A1 SALT			
A1 ANHYDRITE	492.7		
GUELPH	496.5		
ERAMOSA			
GOAT ISLAND	508.4		
[illegible]/WARTON	524.0		
DECEW			
ROCHESTER			
IRONDEQUOIT			
REYNALES/FOSSIL HILL			
THOROLD			
GRIMSBY			
CABOT HEAD			
MANITOULIN			
WHIRLPOOL			
QUEENSTON			
BLUE MOUNTAIN - GEORG BAY			
COLLINGWOOD			
COBOURG			
VERULAM			
KIRKFIELD			
COBOCONK			
GULL RIVER			
SHADOW LAKE			
CAMBRIAN			
PRECAMBRIAN			

GEOLOGY BY T.R. Carter

CTY Kent TWP Dover BLK TRAC 1 LOT 6 CON III E
WELL NAME PPC 10 Dover 1-6-III East PERMIT 7207 INIT CLASS NPW
OPERATOR PPC Oil & Gas Corporation TARGET ORD CUR STATUS GP

DRILLING DATA				DATES		COORDINATES			SAMPLES	
CONTRACTOR	Corunna Drilling Ltd			PERMIT	1987-12-10	NORTH		m	TOP	97
RIG TYPE	Rotary	DEPTHS		SPUD	1987-12-10	SOUTH	106.7	m	BOT	1173
CABLE TOP		KB ELEV	181.1	COMPTD	1987-12-22	EAST		m	TRAY	9292-
BOT		LOGGER	1176.0	OFFCNF	1988-12-22	WEST	106.7	m		9293
ROTRY TOP	3.7	DRILLER	1175.0	WRKOVR	1988-01-13	LAT	42 22 15			
BOT	1176.0	DEEP END		ABNOND		LONG	82 19 50			
DRLG FLD		PLUG BK								

INITIAL GAS RECORD

INTERVAL	FLOW	SIP
916 – 917		
925 – 926		
943 – 944		
–		
–		
–		

CASING AND TUBING RECORD

DIAM	WEIGHT	SET AT	HOW SET	RECOV
298	42.9	97	CEM	0
219	35.7	611.8	CEM	0
139	22.7	1085	CEM	0

COMPLETION DATA

GAS	32.0 10³m³/d
OIL	m³/d
SIP	kPa
FORM	Verulam
INTRVL	920.3-927.0 m
	m
	m

PERF ☒ OPEN HOLE ☐

INITIAL OIL RECORD

INTERVAL	FLOW	DENSITY
–		
–		
–		
–		
–		
–		

LOGGING RECORD

INTERVAL	TYPE	COMPANY
611.9 – 1172.5	SONL	SCH
15.0 – 1175.0	GRL	"
15.0 – 1175.0	CNFD	"
611.9 – 1175.0	LATL	"
611.9 – 1175.0	MSFL	"
854.0 – 1169.0	ELPR	"
611.9 – 1175.0	NGRS	"

REMARKS

Gas analysis
Drill stem test

INITIAL WATER RECORD

INTERVAL	STAT LEV	TYPE
–		
–		
–		
–		
–		
–		

CORING RECORD

INTERVAL	LOCATION	NO	mm
–			
–			
–			
–			
–			
–			

GEOLOGICAL CONTACTS	TOP	ELEV	THICK
KB / [illegible]	0.0		
DRIFT / [illegible]	3.7		
PORT LAMBTON			
KETTLE POINT	23.2		
HAMILTON	27.2		
MARCELLUS			
DUNDEE	93.0		
COLUMBUS			
LUCAS	129.3		
AMHERSTBURG	187.0		
SYLVANIA			
BOIS BLANC	233.5		
SPRINGVALE			
ORISKANY			
BASS ISLANDS	271.0		
G SHALE	310.2		
F SHALE	317.2		
F SALT			
E CARBONATE	361.6		
D SALT/EQUIVALENT			
C SHALE	390.8		
B MARKER	409.0		
B EQUIVALENT	414.9		
B SALT	422.0		
B ANHYDRITE			
A2 CARBONATE	468.8		
A2 SALT			
A2 ANHYDRITE	496.9		
A1 CARBONATE	499.3		
A1 SALT			
A1 ANHYDRITE			
GUELPH	510.3		
ERAMOSA			
GOAT ISLAND	535.7		
[illegible]/WARTON	585.9		
DECEW			
ROCHESTER	595.3		
IRONDEQUOIT			
[illegible]/FOSSIL HILL	603.0		
THOROLD			
GRIMSBY			
CABOT HEAD	604.4		
MANITOULIN	644.3		
WHIRLPOOL			
QUEENSTON	654.1		
BLUE MOUNTAIN - GEORG BAY	748.1		
COLLINGWOOD	876.5		
COBOURG	882.8		
VERULAM	904.5		
KIRKFIELD	961.3		
COBOCONK	1005.0		
GULL RIVER	1038.4		
SHADOW LAKE	1140.0		
CAMBRIAN			
PRECAMBRIAN	1149.0		

GEOLOGY BY T.R. Carter

CTY Kent TWP Lake Erie BLK 222 TRAC N LOT CON

WELL NAME Consumers 13910 Lake Erie 222-N PERMIT 7131 INIT CLASS DEV

OPERATOR TARGET SAL CUR STATUS GP

DRILLING DATA

CONTRACTOR Underwater Gas Developers Ltd
RIG TYPE DEPTHS
CABLE TOP KB ELEV 181.0
BOT LOGGER 517.2
ROTRY TOP 31.1 DRILLER 518.0
BOT DEEP END
DRLG FLD PLUG BK

DATES

PERMIT 1987-04-10
SPUD 1987-04-22
COMPTD 1987-04-26
OFFCNF 1987-05-26
WRKOVR
ABNOND

COORDINATES

NORTH m
SOUTH m
EAST m
WEST m
LAT 42 12 22
LONG 81 33 45

SAMPLES

TOP 84
BOT 517
TRAY 6438

INITIAL GAS RECORD

INTERVAL	FLOW	SIP
501.0 – 517.2	63.6	4489
–		
–		
–		
–		
–		

CASING AND TUBING RECORD

DIAM	WEIGHT	SET AT	HOW SET	RECOV
273	75.9	31.2	HAN	31.2
244	53.6	81.1	CEM	0
178	29.8	229.4	CEM	0
114	14.4	501.2	CEM	0
60	7.0	516.3	HAN	0

COMPLETION DATA

GAS 63.601 10³m³/d
OIL m³/d
SIP 4489 kPa
FORM Guelph, A-1 Carb,
INTRVL 504.5-505.8 m
508.5-518.0 m
m

INITIAL OIL RECORD

INTERVAL	FLOW	DENSITY
–		
–		
–		
–		
–		

LOGGING RECORD

INTERVAL	TYPE	COMPANY
30.0 – 516.0	GRL	SCH
30.0 – 516.0	CNL	"
227.5 – 516.0	LDT	"
–		
–		
–		
–		

PERF ☐ OPEN HOLE ☒

REMARKS

A-2 Shale at 496.0

INITIAL WATER RECORD

INTERVAL	STAT LEV	TYPE
–		
–		
–		
–		
–		
–		

CORING RECORD

INTERVAL	LOCATION	NO	mm
–			
–			
–			
–			
–			

GEOLOGICAL CONTACTS

		TOP	ELEV	THICK
	KB/LAKE LEVEL	6.4		
	DRFT/LAKE BOTTOM	31.1		
DEVONIAN	PORT LAMBTON			
	KETTLE POINT	66.0		
	HAMILTON	125.0		
	MARCELLUS	189.5		
	DUNDEE	198.0		
	COLUMBUS			
	LUCAS	245.5		
	AMHERSTBURG	260.0		
	SYLVANIA			
	BOIS BLANC	285.0		
	SPRINGVALE			
	ORISKANY			
SILURIAN	BASS ISLANDS	325.0		
	G SHALE	369.2		
	F SHALE	376.2		
	F SALT			
	E CARBONATE	415.1		
	D SALT/EQUIVALENT			
	C SHALE	439.9		
	B MARKER	461.9		
	B EQUIVALENT	467.9		
	B SALT			
	B ANHYDRITE	478.7		
	A2 CARBONATE	483.8		
	A2 SALT			
SILURIAN	A2 ANHYDRITE	496.8		
	A1 CARBONATE	499.0		
	A1 SALT			
	A1 ANHYDRITE			
	GUELPH	507.5		
	ERAMOSA			
	GOAT ISLAND			
	GASPORT/WARTON			
	DECEW			
	ROCHESTER			
	IRONDEQUOIT			
	REYNALES/FOSSIL HILL			
	THOROLD			
	GRIMSBY			
	CABOT HEAD			
	MANITOULIN			
	WHIRLPOOL			
ORDOVICIAN	QUEENSTON			
	BLUE MOUNTAIN - GEORG BAY			
	COLLINGWOOD			
	COBOURG			
	VERULAM			
	KIRKFIELD			
	COBOCONK			
	GULL RIVER			
	SHADOW LAKE			
	CAMBRIAN			
	PRECAMBRIAN			

GEOLOGY BY T.R. Carter

CTY Kent TWP Romney BLK TRAC 7 LOT 10 CON II

WELL NAME Cons et al 34340 Romney 7-10-II PERMIT 7203 INIT CLASS RPM

OPERATOR The Consumers' Gas Company Ltd TARGET ORD CUR STATUS OP

DRILLING DATA

CONTRACTOR Underwater Gas Developers Ltd
RIG TYPE Rotary DEPTHS
CABLE TOP KB ELEV 191.9
BOT LOGGER 1100.5
ROTRY TOP 4.7 DRILLER 1106.0
BOT 1106.0 DEEP END
DRLG FLD PLUG BK 1100.0

DATES

PERMIT 1987-11-24
SPUD 1987-11-28
COMPTD 1987-12-06
OFFCNF 1988-12-06
WRKOVR 1988-08-30
ABNOND

COORDINATES

NORTH 107.0 m
SOUTH m
EAST 120.0 m
WEST m
LAT 42 06 35
LONG 82 25 58

SAMPLES

TOP 0
BOT 1107
TRAY 9356-
9357

INITIAL GAS RECORD

INTERVAL	FLOW	SIP
66 –		
710 –		
804 –		
–		
–		
–		

CASING AND TUBING RECORD

DIAM	WEIGHT	SET AT	HOW SET	RECOV
244	54	61.6	CEM	0
178	29.8	528.6	CEM	0
114	14.0	1103.6	CEM	0
60	7.0	843.9	HAN	0

COMPLETION DATA

GAS 10³m³/d
OIL 38 m³/d
SIP 2300 kPa
FORM
INTRVL 823-844 m
m
m

INITIAL OIL RECORD

INTERVAL	FLOW	DENSITY
834 –		
–		
–		
–		
–		
–		

LOGGING RECORD

INTERVAL	TYPE	COMPANY
34.0 – 1093.0	GRL	SCH
34.0 – 1093.0	CNFD	"
35.7 – 1097.0	SONL	"
800.0 – 1094.0	ELPR	"
526.0 – 1100.2	LATL	"
526.0 – 1100.2	MSFL	"
–		

PERF ☒ OPEN HOLE ☐

REMARKS

A-2 Shale at 381.0

INITIAL WATER RECORD

INTERVAL	STAT LEV	TYPE
144 –		SUL
199 –		SUL
–		
–		
–		
–		

CORING RECORD

INTERVAL	LOCATION	NO	mm
–			
–			
–			
–			
–			

GEOLOGICAL CONTACTS

		TOP	ELEV	THICK
	KB/LAKE LEVEL	0.0		
	DRFT/LAKE BOTTOM	4.7		
DEVONIAN	PORT LAMBTON			
	KETTLE POINT			
	HAMILTON			
	MARCELLUS			
	DUNDEE	44.5		
	COLUMBUS			
	LUCAS	83.0		
	AMHERSTBURG	100.5		
	SYLVANIA			
	BOIS BLANC	122.0		
	SPRINGVALE			
	ORISKANY			
SILURIAN	BASS ISLANDS	140.0		
	G SHALE	237.7		
	F SHALE	244.2		
	F SALT			
	E CARBONATE	289.3		
	D SALT/EQUIVALENT			
	C SHALE	317.1		
	B MARKER	340.8		
	B EQUIVALENT	344.0		
	B SALT			
	B ANHYDRITE	356.0		
	A2 CARBONATE	363.5		
	A2 SALT			
SILURIAN	A2 ANHYDRITE	382.0		
	A1 CARBONATE	387.2		
	A1 SALT			
	A1 ANHYDRITE			
	GUELPH	396.5		
	ERAMOSA			
	GOAT ISLAND	415.7		
	GASPORT/WARTON	490.9		
	DECEW			
	ROCHESTER	502.2		
	IRONDEQUOIT			
	REYNALES/FOSSIL HILL	509.0		
	THOROLD			
	GRIMSBY			
	CABOT HEAD	512.9		
	MANITOULIN	552.1		
	WHIRLPOOL			
ORDOVICIAN	QUEENSTON	562.2		
	BLUE MOUNTAIN - GEORG BAY	650.9		
	COLLINGWOOD			
	COBOURG	811.3		
	VERULAM	819.1		
	KIRKFIELD	873.9		
	COBOCONK	910.4		
	GULL RIVER	941.8		
	SHADOW LAKE	1051.0		
	CAMBRIAN	1052.0		
	PRECAMBRIAN	1086.0		

GEOLOGY BY T.R. Carter

T.R. Carter

CTY	Kent	TWP	Romney	BLK	TRAC 6	LOT 13	CON III				
WELL NAME	Cons et al 34281 Romney 6-13-III			PERMIT	7155	INIT CLASS	NFW				
OPERATOR	The Consumers' Gas Co. Ltd.			TARGET	ORD	CUR STATUS	OP				

DRILLING DATA				DATES		COORDINATES			SAMPLES	
CONTRACTOR	Underwater Gas Developers Ltd			PERMIT	1987-07-15	NORTH	563.0	m	TOP	0
RIG TYPE	Rotary	DEPTHS		SPUD	1987-07-22	SOUTH		m	BOT	1104
CABLE TOP		KB ELEV	192.6	COMPTD	1987-07-30	EAST	195.0	m	TRAY	9268-
BOT		LOGGER	1106.0	OFFCNF		WEST		m		9269
ROTRY TOP	4.8	DRILLER	1105.0	WRKOVR	1987-10-21	LAT	42 08 01			
BOT	1105.0	DEEP END		ABNDND		LONG	82 25 49			
DRLG FLD		PLUG BK								

INITIAL GAS RECORD

INTERVAL	FLOW	SIP
851.0 – 881.5		6922
914.5 – 928.5		9288
832.0 – 855.0		6821
–		
–		
–		

CASING AND TUBING RECORD

DIAM	WEIGHT	SET AT	HOW SET	RECOV
244	54	71.4	CEM	-
178	25.3	527.1	CEM	-
114	14.0	1096.8	CEM	-
60	7.0	876.1	HAN	-

COMPLETION DATA

GAS	$10^3m^3/d$
OIL	m^3/d
SIP	kPa
FORM	Verulam
INTRVL	834.5-852.3 m
	m
	m
PERF ☐	OPEN HOLE ☐

INITIAL OIL RECORD

INTERVAL	FLOW	DENSITY
836.3 – 838.0		
–		
–		
–		
–		
–		

LOGGING RECORD

INTERVAL	TYPE	COMPANY
13.0 – 1105.2	CNFD	SCH
45.0 – 1103.0	SONL	"
526.0 – 1105.0	LATL	"
526.0 – 1105.0	MSFL	"
800.0 – 1105.2	CBLK	"
800.0 – 1100.0	ELPR	"
13.0 – 1105.2	GRL	"

REMARKS

Gas, oil and water analyses

A-2 Shale at 390.4

INITIAL WATER RECORD

INTERVAL	STAT LEV	TYPE
152 –		SUL
426 –		SAL
–		
–		
–		
–		

CORING RECORD

INTERVAL	LOCATION	NO	mm
–			
–			
–			
–			
–			

GEOLOGICAL CONTACTS		TOP	ELEV	THICK
	KB / [illegible]	0.0		
	DRIFT / [illegible]	4.8		
DEVONIAN	PORT LAMBTON			
	KETTLE POINT			
	HAMILTON	50.9		
	MARCELLUS			
	DUNDEE	71.8		
	COLUMBUS			
	LUCAS	118.0		
	AMHERSTBURG	144.5		
	SYLVANIA			
	BOIS BLANC	191.0		
	SPRINGVALE			
	ORISKANY			
SILURIAN	BASS ISLANDS	200.5		
	G SHALE	260.4		
	F SHALE	267.0		
	F SALT			
	E CARBONATE	308.9		
	D SALT/EQUIVALENT			
	C SHALE	338.0		
	B MARKER	351.3		
	B EQUIVALENT	357.0		
	B SALT			
	B ANHYDRITE	366.4		
	A2 CARBONATE	373.6		
	A2 SALT			
	A2 ANHYDRITE	391.2		
	A1 CARBONATE	396.5		
	A1 SALT			
	A1 ANHYDRITE			
SILURIAN	GUELPH	406.7		
	ERAMOSA			
	GOAT ISLAND	474.0		
	GASPORT/WARTON			
	DECEW			
	ROCHESTER	510.8		
	IRONDEQUOIT			
	REYNALES/FOSSIL HILL	517.8		
	THOROLD			
	GRIMSBY			
	CABOT HEAD	520.7		
	MANITOULIN	559.5		
	WHIRLPOOL			
ORDOVICIAN	QUEENSTON	570.0		
	BLUE MOUNTAIN - GEORG BAY	661.2		
	COLLINGWOOD			
	COBOURG	814.0		
	VERULAM	823.2		
	KIRKFIELD	879.4		
	COBOCONK	916.4		
	GULL RIVER	947.5		
	SHADOW LAKE	1056.0		
	CAMBRIAN	1055.0		
	PRECAMBRIAN	1091.8		

GEOLOGY BY T.R. Carter

CTY	Kent	TWP	Tilbury East	BLK	TRAC 3	LOT 23	CON IX				
WELL NAME	Ram 97 Tilbury East 3-23-IX			PERMIT	7161	INIT CLASS	NFW				
OPERATOR	Ram Petroleums Ltd			TARGET	ORD	CUR STATUS	OS-ABD				

DRILLING DATA				DATES		COORDINATES			SAMPLES	
CONTRACTOR	Corunna Drilling Ltd			PERMIT	1987-07-17	NORTH		m	TOP	82
RIG TYPE	Rotary	DEPTHS		SPUD	1987-07-26	SOUTH	447.7	m	BOT	1115
CABLE TOP		KB ELEV	187.2	COMPTD	1987-08-04	EAST	107.7	m	TRAY	9218-
BOT		LOGGER	1115.0	OFFCNF	1988-08-04	WEST		m		9219
ROTRY TOP	3.6	DRILLER	1115.0	WRKOVR		LAT	42 11 59			
BOT	1115.0	DEEP END		ABNDND	1989-10-05	LONG	82 24 29			
DRLG FLD		PLUG BK								

INITIAL GAS RECORD

INTERVAL	FLOW	SIP
–		
–		
–		
–		
–		
–		

CASING AND TUBING RECORD

DIAM	WEIGHT	SET AT	HOW SET	RECOV
298	62.5	77.7	CEM	0
219	35.7	517.6	CEM	0
140	20.8	920.0	CEM	0

COMPLETION DATA

GAS	$10^3m^3/d$
OIL	m^3/d
SIP	kPa
FORM	
INTRVL	m
	m
	m
PERF ☒	OPEN HOLE ☐

INITIAL OIL RECORD

INTERVAL	FLOW	DENSITY
–		
–		
–		
–		
–		
–		

LOGGING RECORD

INTERVAL	TYPE	COMPANY
517 – 1114.7	GRL	SCH
517 – 1114.7	CNFD	"
15.0 – 111 .7	SONL	"
517 – 1114.7	LATL	"
517 – 1114.7	MSFL	"
517 – 1114.7	NGRS	"
–		

REMARKS

A-2 Shale at 405.6

INITIAL WATER RECORD

INTERVAL	STAT LEV	TYPE
–		
–		
–		
–		
–		
–		

CORING RECORD

INTERVAL	LOCATION	NO	mm
–			
–			
–			
–			
–			

GEOLOGICAL CONTACTS		TOP	ELEV	THICK
	KB / [illegible]	0.0		
	DRIFT / [illegible]	3.6		
DEVONIAN	PORT LAMBTON			
	KETTLE POINT			
	HAMILTON			
	MARCELLUS			
	DUNDEE	72.3		
	COLUMBUS			
	LUCAS	103.0		
	AMHERSTBURG	145.0		
	SYLVANIA			
	BOIS BLANC	193.0		
	SPRINGVALE			
	ORISKANY			
SILURIAN	BASS ISLANDS	207.5		
	G SHALE	272.6		
	F SHALE	279.1		
	F SALT			
	E CARBONATE	321.5		
	D SALT/EQUIVALENT			
	C SHALE	349.3		
	B MARKER	365.2		
	B EQUIVALENT	371.5		
	B SALT			
	B ANHYDRITE	380.5		
	A2 CARBONATE	385.6		
	A2 SALT			
	A2 ANHYDRITE	407.9		
	A1 CARBONATE	410.0		
	A1 SALT			
	A1 ANHYDRITE			
SILURIAN	GUELPH	424.0		
	ERAMOSA			
	GOAT ISLAND	487.4		
	GASPORT/WARTON			
	DECEW	525.0		
	ROCHESTER			
	IRONDEQUOIT	531.9		
	REYNALES/FOSSIL HILL			
	THOROLD			
	GRIMSBY			
	CABOT HEAD	534.3		
	MANITOULIN	573.0		
	WHIRLPOOL			
ORDOVICIAN	QUEENSTON	583.2		
	BLUE MOUNTAIN - GEORG BAY	675.7		
	COLLINGWOOD			
	COBOURG	823.9		
	VERULAM	837.0		
	KIRKFIELD	893.1		
	COBOCONK	936.6		
	GULL RIVER	968.0		
	SHADOW LAKE	1074.9		
	CAMBRIAN	1076.1		
	PRECAMBRIAN	1098.4		

GEOLOGY BY T.R. Carter

CTY: Kent TWP: Tilbury East BLK: TRAC: 1 LOT: 24 CON: IX

WELL NAME: Ram 94 Tilbury East 1-24-IX PERMIT: 7100 INIT CLASS: NPW

OPERATOR: Ram Petroleums Ltd TARGET: ORD CUR STATUS: OP

DRILLING DATA

CONTRACTOR: B & S Rotary Drilling
RIG TYPE: Rotary DEPTHS
CABLE TOP: KB ELEV: 186.9
BOT: LOGGER: 1095.7
ROTRY TOP: 3.5 DRILLER: 1115.0
BOT: 1115.0 DEEP END:
DRLG FLD: PLUG BK: 1105.0

DATES

PERMIT: 1986-12-30
SPUD: 1987-01-15
COMPTD: 1987-02-03
OFFCNF: 1988-02-03
WRKOVR:
ABNDND:

COORDINATES

NORTH: m
SOUTH: 109.0 m
EAST: m
WEST: 202.8 m
LAT: 42 12 00
LONG: 82 24 48

SAMPLES

TOP: 68
BOT: 1115
TRAY: 9174-9175

INITIAL GAS RECORD

INTERVAL	FLOW	SIP
–		
–		
–		
–		
–		
–		

CASING AND TUBING RECORD

DIAM	WEIGHT	SET AT	HOW SET	RECOV
299	62.5	46.4	CEM	0
220	35.7	521.5	CEM	0
140	20.8	1115.0	CEM	0

COMPLETION DATA

GAS: 10³m³/d
OIL: 1.3 m³/d
SIP: kPa
FORM: Verulam
INTRVL: 852-855 m
m
m
PERF ☑ OPEN HOLE ☐

INITIAL OIL RECORD

INTERVAL	FLOW	DENSITY
–		
–		
–		
–		
–		
–		

LOGGING RECORD

INTERVAL	TYPE	COMPANY
30.0 – 1091.0	GRL	SCH
521.0 – 1095.0	CNFD	"
30.0 – 1091.0	SONL	"
524.0 – 1091.0	LATL	"
524.0 – 1095.0	MSFL	"
–		
–		

REMARKS

A-2 Shale at 403.9

INITIAL WATER RECORD

INTERVAL	STAT LEV	TYPE
–		
–		
–		
–		
–		
–		

CORING RECORD

INTERVAL	LOCATION	NO.	mm
–			
–			
–			
–			
–			
–			

GEOLOGICAL CONTACTS	TOP	ELEV	THICK
KB / [illegible]	0.0		
DRIFT / [illegible]	3.5		
DEVONIAN: PORT LAMBTON			
KETTLE POINT			
HAMILTON			
MARCELLUS			
DUNDEE	67.3		
COLUMBUS			
LUCAS	120.0		
AMHERSTBURG	143.0		
SYLVANIA			
BOIS BLANC	182.0		
SPRINGVALE			
ORISKANY			
SILURIAN: BASS ISLANDS	195.5		
G SHALE	269.6		
F SHALE	276.0		
F SALT			
E CARBONATE	319.6		
D SALT/EQUIVALENT			
C SHALE	347.4		
B MARKER	364.3		
B EQUIVALENT	370.0		
B SALT			
B ANHYDRITE	379.5		
A2 CARBONATE	386.0		
A2 SALT			
A2 ANHYDRITE	406.0		
A1 CARBONATE	410.0		
A1 SALT			
A1 ANHYDRITE			
SILURIAN: GUELPH	422.2		
ERAMOSA			
GOAT ISLAND			
GASPORT/MARTON			
DECEW			
ROCHESTER	522.2		
IRONDEQUOIT			
[illegible]/FOSSIL HILL	529.5		
THOROLD			
GRIMSBY			
CABOT HEAD	532.0		
MANITOULIN	570.4		
WHIRLPOOL			
ORDOVICIAN: QUEENSTON	581.0		
BLUE MOUNTAIN - GEORG BAY	673.5		
COLLINGWOOD			
COBOURG	820.0		
VERULAM	832.5		
KIRKFIELD	891.4		
COBOCONK	931.6		
GULL RIVER	1006.9		
SHADOW LAKE	1071.2		
CAMBRIAN	1074.6		
PRECAMBRIAN	1097.0		

GEOLOGY BY T.R. Carter

CTY: Kent TWP: Tilbury East BLK: TRAC: 6 LOT: 24 CON: IX

WELL NAME: Ram 96 Tilbury East 6-24-IX PERMIT: 7152 INIT CLASS: NPW

OPERATOR: Ram Petroleums Ltd TARGET: ORD CUR STATUS: OS-SUS

DRILLING DATA

CONTRACTOR: Corunna Rotery Drilling
RIG TYPE: Rotary DEPTHS
CABLE TOP: KB ELEV: 187.5
BOT: LOGGER: 1104.0
ROTRY TOP: 3.6 DRILLER: 1115.4
BOT: 1115.4 DEEP END:
DRLG FLD: PLUG BK: 1050.0

DATES

PERMIT: 1987-06-26
SPUD: 1987-07-08
COMPTD: 1987-07-18
OFFCNF: 1988-07-18
WRKOVR:
ABNDND:

COORDINATES

NORTH: m
SOUTH: 775.0 m
EAST: 137.9 m
WEST: m
LAT: 42 11 5.
LONG: 82 24 38

SAMPLES

TOP: 80
BOT: 1115
TRAY: 9224-9225

INITIAL GAS RECORD

INTERVAL	FLOW	SIP
873.0 –		
–		
–		
–		
–		
–		

CASING AND TUBING RECORD

DIAM	WEIGHT	SET AT	HOW SET	RECOV
299	62.5	76.4	CEM	0
219	35.7	519.0	CEM	0
140	20.8	1050.0	CEM	0

COMPLETION DATA

GAS: 10³m³/d
OIL: 0.5 m³/d
SIP: kPa
FORM:
INTRVL: 827.5-831.6 m
840 -842 m
m
PERF ☑ OPEN HOLE ☐

INITIAL OIL RECORD

INTERVAL	FLOW	DENSITY
873.0 –		
–		
–		
–		
–		
–		

LOGGING RECORD

INTERVAL	TYPE	COMPANY
519.0 – 1103.5	CNFD	SCH
519.0 – 1097.5	LATL	"
519.0 – 1102.5	MSFL	"
25.0 – 1102.5	SONL	"
519.0 – 1103.5	NGRS	"
815.0 – 1102.5	MSON	"
519.0 – 1103.5	GRL	"

REMARKS

A-2 Shale at 405.5

INITIAL WATER RECORD

INTERVAL	STAT LEV	TYPE
235.0 –		
–		
–		
–		
–		
–		

CORING RECORD

INTERVAL	LOCATION	NO.	mm
–			
–			
–			
–			
–			
–			

GEOLOGICAL CONTACTS	TOP	ELEV	THICK
KB / [illegible]	0.0		
DRIFT / [illegible]	3.6		
DEVONIAN: PORT LAMBTON			
KETTLE POINT			
HAMILTON			
MARCELLUS			
DUNDEE	57.0		
COLUMBUS			
LUCAS	102.0		
AMHERSTBURG	128.0		
SYLVANIA			
BOIS BLANC	161.0		
SPRINGVALE			
ORISKANY			
SILURIAN: BASS ISLANDS	181.0		
G SHALE	274.3		
F SHALE	280.4		
F SALT			
E CARBONATE	321.4		
D SALT/EQUIVALENT			
C SHALE	349.2		
B MARKER	365.7		
B EQUIVALENT	371.3		
B SALT			
B ANHYDRITE	380.9		
A2 CARBONATE	385.3		
A2 SALT			
A2 ANHYDRITE	407.8		
A1 CARBONATE	411.9		
A1 SALT			
A1 ANHYDRITE			
SILURIAN: GUELPH	424.8		
ERAMOSA			
GOAT ISLAND	486.3		
GASPORT/MARTON			
DECEW			
ROCHESTER	523.2		
IRONDEQUOIT			
REYNALES/FOSSIL HILL	530.2		
THOROLD			
GRIMSBY			
CABOT HEAD	532.7		
MANITOULIN	572.3		
WHIRLPOOL			
ORDOVICIAN: QUEENSTON	581.8		
BLUE MOUNTAIN - GEORG BAY	676.2		
COLLINGWOOD			
COBOURG	825.1		
VERULAM	837.3		
KIRKFIELD	890.4		
COBOCONK	928.0		
GULL RIVER	961.1		
SHADOW LAKE	1071.8		
CAMBRIAN	1073.4		
PRECAMBRIAN	1097.0		

GEOLOGY BY T.R. Carter

T.R. Carter

CTY: Kent | TWP: | Zone: | BLK: | TRAC: 3-8 | LOT: 2 | CON: V

WELL NAME: Cornwall Creek 1 Zone 3-8-2-V | PERMIT: 7148 | INIT CLASS: DEV

OPERATOR: Penway Explorers Ltd | TARGET: DEV | CUR STATUS: DH-ABD

DRILLING DATA

CONTRACTOR: Southwest Well Servicing Ltd
RIG TYPE: Cable | DEPTHS
CABLE TOP: 0 | KB ELEV: 192.1
BOT: 137.2 | LOGGER:
ROTRY TOP: | DRILLER: 137.2
BOT: | DEEP END:
DRLG FLD: | PLUG BK:

DATES

PERMIT: 1987-06-09
SPUD: 1987-06-09
COMPTD: 1987-06-22
OFFCNF: 1987-07-22
WRKOVR:
ABNDND: 1987-06-29

COORDINATES

NORTH: 227.1 m
SOUTH: m
EAST: 83.8 m
WEST: m
LAT:
LONG:

SAMPLES

TOP: 33.5
BOT: 136.2
TRAY: 3112

INITIAL GAS RECORD

INTERVAL	FLOW	SIP
–		
–		
–		
–		
–		
–		

CASING AND TUBING RECORD

DIAM	WEIGHT	SET AT	HOW SET	RECOV
216	35.7	33.3	SHO	33.3
177	25.3	93.6	SHO	93.6

COMPLETION DATA

GAS: 10 ^{3}m^3/d
OIL: m^3/d
SIP: kPa
FORM:
INTRVL: m
m
m

INITIAL OIL RECORD

INTERVAL	FLOW	DENSITY
–		
–		
–		
–		
–		
–		

LOGGING RECORD

INTERVAL	TYPE	COMPANY
–		
–		
–		
–		
–		
–		

PERF ☐ OPEN HOLE ☐

REMARKS

INITIAL WATER RECORD

INTERVAL	STAT LEV	TYPE
18.2 –		FRE
133.1 –		SUL
–		
–		
–		
–		

CORING RECORD

INTERVAL	LOCATION	NO	mm
–			
–			
–			
–			
–			
–			

GEOLOGICAL CONTACTS

		TOP	ELEV	THICK
	KB / ORIG LEVEL	0.0		
	DRIFT / ORIG BOTTOM	0.0		
DEVONIAN	PORT LAMBTON			
	KETTLE POINT			
	HAMILTON	33.5		
	MARCELLUS			
	DUNDEE	89.5		
	COLUMBUS	133.0		
	LUCAS			
	AMHERSTBURG			
	SYLVANIA			
	BOIS BLANC			
	SPRINGVALE			
	ORISKANY			
SILURIAN	BASS ISLANDS			
	G SHALE			
	F SHALE			
	F SALT			
	E CARBONATE			
	D SALT/EQUIVALENT			
	C SHALE			
	B MARKER			
	B EQUIVALENT			
	B SALT			
	B ANHYDRITE			
	A2 CARBONATE			
	A2 SALT			

	A2 ANHYDRITE			
	A1 CARBONATE			
	A1 SALT			
	A1 ANHYDRITE			
	GUELPH			
	ERAMOSA			
	GOAT ISLAND			
SILURIAN	GASPORT/WIARTON			
	DECEW			
	ROCHESTER			
	IRONDEQUOIT			
	REYNALES/FOSSIL HILL			
	THOROLD			
	GRIMSBY			
	CABOT HEAD			
	MANITOULIN			
	WHIRLPOOL			
ORDOVICIAN	QUEENSTON			
	BLUE MOUNTAIN - GEORG BAY			
	COLLINGWOOD			
	COBOURG			
	VERULAM			
	KIRKFIELD			
	COBOCONK			
	GULL RIVER			
	SHADOW LAKE			
CAMBRIAN				
PRECAMBRIAN				

GEOLOGY BY: T.R. Carter

CTY: Kent | TWP: | Zone: | BLK: | TRAC: 4-4 | LOT: 11 | CON: VI

WELL NAME: Bryant-Union Zone 4-4-11-VI | PERMIT: 7147 | INIT CLASS: RD

OPERATOR: R.G. Bryant Energy Associates Inc. | TARGET: DEV | CUR STATUS: RD

DRILLING DATA

CONTRACTOR: Bothwell
RIG TYPE: Rotary | DEPTHS
CABLE TOP: | KB ELEV: 198.5
BOT: | LOGGER:
ROTRY TOP: 113.1 | DRILLER: 191.4
BOT: 191.4 | DEEP END:
DRLG FLD: | PLUG BK:

DATES

PERMIT: 1987-05-27
SPUD: 1987-06-09
COMPTD: 1987-06-11
OFFCNF: 1987-07-11
WRKOVR:
ABNDND:

COORDINATES

NORTH: 89.0 m
SOUTH: m
EAST: m
WEST: 564.0 m
LAT: 42 55 12
LONG: 81 37 28

SAMPLES

TOP: 100.6
BOT: 192.0
TRAY: 362

INITIAL GAS RECORD

INTERVAL	FLOW	SIP
34 –		
–		
–		
–		
–		
–		

CASING AND TUBING RECORD

DIAM	WEIGHT	SET AT	HOW SET	RECOV
219	35.7	7.9	BAR	0
178	34.2	23.2	SHO	0
139.7	20.8	92.4	SHO	92.4
114.3	14.1	131.2	CEM	0

COMPLETION DATA

GAS: 10 ^{3}m^3/d
OIL: m^3/d
SIP: kPa
FORM: Lucas
INTRVL: m
m
m

INITIAL OIL RECORD

INTERVAL	FLOW	DENSITY
95 – 96		
98.1 – 99.4		
107.8 – 111.6		
–		
–		
–		

LOGGING RECORD

INTERVAL	TYPE	COMPANY
0 – 112.3	GRNL	Computalog
87.8 – 112.3	DENL	"
–		
–		
–		
–		

PERF ☐ OPEN HOLE ☒

REMARKS: Deepening of well drilled under Permit 6918 from 113.1 to 191.4

INITIAL WATER RECORD

INTERVAL	STAT LEV	TYPE
22.8 –		FRE
92.9 –		SUL
–		
–		
–		
–		

CORING RECORD

INTERVAL	LOCATION	NO	mm
–			
–			
–			
–			
–			
–			

GEOLOGICAL CONTACTS

		TOP	ELEV	THICK
	KB / ORIG LEVEL	0.0		
	DRIFT / BEDROCK TOP	0.8		
DEVONIAN	PORT LAMBTON			
	KETTLE POINT			
	HAMILTON	23.2		
	MARCELLUS			
	DUNDEE	89.0		
	COLUMBUS			
	LUCAS	146.3		
	AMHERSTBURG			
	SYLVANIA			
	BOIS BLANC			
	SPRINGVALE			
	ORISKANY			
SILURIAN	BASS ISLANDS			
	G SHALE			
	F SHALE			
	F SALT			
	E CARBONATE			
	D SALT/EQUIVALENT			
	C SHALE			
	B MARKER			
	B EQUIVALENT			
	B SALT			
	B ANHYDRITE			
	A2 CARBONATE			
	A2 SALT			

	A2 ANHYDRITE			
	A1 CARBONATE			
	A1 SALT			
	A1 ANHYDRITE			
	GUELPH			
	ERAMOSA			
	GOAT ISLAND			
SILURIAN	GASPORT/WIARTON			
	DECEW			
	ROCHESTER			
	IRONDEQUOIT			
	REYNALES/FOSSIL HILL			
	THOROLD			
	GRIMSBY			
	CABOT HEAD			
	MANITOULIN			
	WHIRLPOOL			
ORDOVICIAN	QUEENSTON			
	BLUE MOUNTAIN - GEORG BAY			
	COLLINGWOOD			
	COBOURG			
	VERULAM			
	KIRKFIELD			
	COBOCONK			
	GULL RIVER			
	SHADOW LAKE			
CAMBRIAN				
PRECAMBRIAN				

GEOLOGY BY: T.R. Carter

CTY: Kent | TWP: Zone | BLK: | TRAC: | LOT: 13 | CON: R.R.

WELL NAME: Tunks Disposal 1 Zone 13-R.R. | PERMIT: 7142 | INIT CLASS: BD

OPERATOR: 625065 Ontario Ltd | TARGET: DEV | CUR STATUS: BD

DRILLING DATA

CONTRACTOR: Tom Marsh Drilling
RIG TYPE: Cable | DEPTHS
CABLE TOP: 0.0 | KB ELEV: 204.1
BOT: 240.8 | LOGGER:
ROTRY TOP: | DRILLER: 240.8
BOT: | DEEP END:
DRLG FLD: | PLUG BK:

DATES

PERMIT: 1987-05-06
SPUD: 1987-05-15
COMPTD: 1987-06-15
OFFCNF: 1987-07-15
WRKOVR:
ABNDND:

COORDINATES

NORTH: m
SOUTH: 82.2 m
EAST: 193.9 m
WEST: m
LAT: 42 36 23
LONG: 81 52 37

SAMPLES

TOP:
BOT:
TRAY:

INITIAL GAS RECORD

INTERVAL	FLOW	SIP
–		
–		
–		
–		
–		
–		

CASING AND TUBING RECORD

DIAM	WEIGHT	SET AT	HOW SET	RECOV
89		125.0	CEM	

COMPLETION DATA

GAS: 10³m³/d
OIL: m³/d
SIP: kPa
FORM:
INTRVL: m
m
m

INITIAL OIL RECORD

INTERVAL	FLOW	DENSITY
–		
–		
–		
–		
–		
–		

LOGGING RECORD

INTERVAL	TYPE	COMPANY
–		
–		
–		
–		
–		
–		

PERF ☐ OPEN HOLE ☐

REMARKS

No samples, no logs. Re-entry and deepening of oil well from 115.8 to 240.8m

INITIAL WATER RECORD

INTERVAL	STAT LEV	TYPE
–		
–		
–		
–		
–		
–		

CORING RECORD

INTERVAL	LOCATION	NO.	mm
–			
–			
–			
–			
–			
–			

GEOLOGICAL CONTACTS	TOP	ELEV	THICK
KB /[illegible]	0.0		
DRIFT /[illegible]	0.0		
DEVONIAN: PORT LAMBTON			
KETTLE POINT			
HAMILTON			
MARCELLUS			
DUNDEE			
COLUMBUS			
LUCAS			
AMHERSTBURG			
SYLVANIA			
BOIS BLANC			
SPRINGVALE			
ORISKANY			
SILURIAN: BASS ISLANDS			
G SHALE			
F SHALE			
F SALT			
E CARBONATE			
D SALT/EQUIVALENT			
C SHALE			
B MARKER			
B EQUIVALENT			
B SALT			
B ANHYDRITE			
A2 CARBONATE			
A2 SALT			
SILURIAN: A2 ANHYDRITE			
A1 CARBONATE			
A1 SALT			
A1 ANHYDRITE			
GUELPH			
ERAMOSA			
GOAT ISLAND			
GASPORT/WARTON			
DECEW			
ROCHESTER			
IRONDEQUOIT			
REYNALES/FOSSIL HILL			
THOROLD			
GRIMSBY			
CABOT HEAD			
MANITOULIN			
WHIRLPOOL			
ORDOVICIAN: QUEENSTON			
BLUE MOUNTAIN - GEORG. BAY			
COLLINGWOOD			
COBOURG			
VERULAM			
KIRKFIELD			
COBOCONK			
GULL RIVER			
SHADOW LAKE			
CAMBRIAN			
PRECAMBRIAN			

GEOLOGY BY: T.R. Carter

CTY: Lambton | TWP: Brooke | BLK: | TRAC: 5 | LOT: 12 | CON: VIII

WELL NAME: Bowrio et al Brooke 5-12-VIII | PERMIT: 7186 | INIT CLASS: NFW

OPERATOR: Bowrio Resources Ltd | TARGET: SAL | CUR STATUS: OS-ABD

DRILLING DATA

CONTRACTOR: James Newport Drilling Ltd
RIG TYPE: Cable | DEPTHS
CABLE TOP: 1.3 | KB ELEV: 214.3
BOT: 605.0 | LOGGER: 605.0
ROTRY TOP: | DRILLER: 605.0
BOT: | DEEP END:
DRLG FLD: | PLUG BK:

DATES

PERMIT: 1987-09-04
SPUD: 1987-09-24
COMPTD: 1987-10-27
OFFCNF: 1988-10-27
WRKOVR:
ABNDND: 1987-11-02

COORDINATES

NORTH: m
SOUTH: 985.0 m
EAST: m
WEST: 260.0 m
LAT: 42 50 46
LONG: 81 55 08

SAMPLES

TOP: 17
BOT: 605
TRAY: 9937

INITIAL GAS RECORD

INTERVAL	FLOW	SIP
–		
–		
–		
–		
–		
–		

CASING AND TUBING RECORD

DIAM	WEIGHT	SET AT	HOW SET	RECOV
273	60.3	17.3	SHO	17.3
219	35.7	123.7	SHO	123.7
178	29.8	332.1	CEM	247.7

COMPLETION DATA

GAS: 10³m³/d
OIL: m³/d
SIP: kPa
FORM:
INTRVL: m
m
m

INITIAL OIL RECORD

INTERVAL	FLOW	DENSITY
576 – 578		
–		
–		
–		
–		
–		

LOGGING RECORD

INTERVAL	TYPE	COMPANY
0 – 605	GRNL	Computalog
480 – 605	DENL	"
–		
–		
–		
–		

PERF ☐ OPEN HOLE ☐

REMARKS

A-2 Shale at 526.5

INITIAL WATER RECORD

INTERVAL	STAT LEV	TYPE
17 –		FRE
146 –	65	SUL
576 – 578	1	SAL
–		
–		
–		

CORING RECORD

INTERVAL	LOCATION	NO.	mm
–			
–			
–			
–			
–			
–			

GEOLOGICAL CONTACTS	TOP	ELEV	THICK
KB /[illegible]	0.0		
DRIFT /[illegible]	1.3		
DEVONIAN: PORT LAMBTON			
KETTLE POINT	18.0		
HAMILTON	44.7		
MARCELLUS			
DUNDEE	122.7		
COLUMBUS			
LUCAS	145.5		
AMHERSTBURG	203.0		
SYLVANIA			
BOIS BLANC	262.0		
SPRINGVALE			
ORISKANY			
SILURIAN: BASS ISLANDS	278.0		
G SHALE	317.1		
F SHALE	324.5		
F SALT			
E CARBONATE	366.2		
D SALT/EQUIVALENT			
C SHALE	392.1		
B MARKER	405.4		
B EQUIVALENT			
B SALT	412.0		
B ANHYDRITE			
A2 CARBONATE	494.0		
A2 SALT	535.5		
SILURIAN: A2 ANHYDRITE	541.8		
A1 CARBONATE	543.8		
A1 SALT			
A1 ANHYDRITE	574.3		
GUELPH	575.0		
ERAMOSA			
GOAT ISLAND	593.5		
GASPORT/WARTON			
DECEW			
ROCHESTER			
IRONDEQUOIT			
REYNALES/FOSSIL HILL			
THOROLD			
GRIMSBY			
CABOT HEAD			
MANITOULIN			
WHIRLPOOL			
ORDOVICIAN: QUEENSTON			
BLUE MOUNTAIN - GEORG. BAY			
COLLINGWOOD			
COBOURG			
VERULAM			
KIRKFIELD			
COBOCONK			
GULL RIVER			
SHADOW LAKE			
CAMBRIAN			
PRECAMBRIAN			

GEOLOGY BY: T.R. Carter

T.R. Carter

CTY Lambton TWP Dawn BLK TRAC 1-7 LOT 18 CON XIII

WELL NAME Brett, Dawn 1-7-18-XIII PERMIT 7154 INIT CLASS BD

OPERATOR H. Brett & Associates Ltd TARGET DEV CUR STATUS BD

DRILLING DATA				DATES		COORDINATES			SAMPLES	
CONTRACTOR	Bothwell Drilling & Servicing			PERMIT	1987-07-14	NORTH		m	TOP	121.9
RIG TYPE	Rotary	DEPTHS		SPUD	1987-07-10	SOUTH	237.5	m	BOT	182.9
CABLE TOP		KB ELEV	197.0	COMPTD	1987-07-13	EAST	233.0	m	TRAY	6681
BOT		LOGGER		OFFCNF	1987-08-12	WEST		m		
ROTRY TOP	118.0	DRILLER	118.0	WRKOVR		LAT	42 40 04			
BOT	183.0	DEEP END	183.0	ABNDND		LONG	82 02 19			
DRLG FLD		PLUG BK								

INITIAL GAS RECORD

INTERVAL	FLOW	SIP

CASING AND TUBING RECORD

DIAM	WEIGHT	SET AT	HOW SET	RECOV
273	59.5	21.0	CEM	0
178	29.8	110.5	CEM	0
60	7.0	98.6	PAC	0

COMPLETION DATA

GAS 10³m³/d
OIL m³/d
SIP kPa
FORM
INTRVL 172.2-180.7 m

INITIAL OIL RECORD

INTERVAL	FLOW	DENSITY
97.5 - 107.6		

LOGGING RECORD

INTERVAL	TYPE	COMPANY
0.0 - 111.2	GRNL	Computalog

PERF ☐ OPEN HOLE ☑

REMARKS

Deepening from 118.0 to 183.0

INITIAL WATER RECORD

INTERVAL	STAT LEV	TYPE
81.6 -		SUL
99.4 - 101.2	36.6	SUL
117.4 - 118.0	45.7	SUL
172.2 - 180.7		SUL

CORING RECORD

INTERVAL	LOCATION	NO	ANN
96.0 - 102.1	COM		N
102.1 - 108.2	COM		N

GEOLOGICAL CONTACTS	TOP	ELEV	THICK
KB /[illegible]	0.0		
DRIFT /[illegible]	1.6		
DEVONIAN: PORT LAMBTON			
KETTLE POINT	10.9		
HAMILTON	11.6		
MARCELLUS			
DUNDEE	73.5		
COLUMBUS	102.1		
LUCAS	117.3		
AMHERSTBURG	164.6		
SYLVANIA			
BOIS BLANC			
SPRINGVALE			
ORISKANY			
SILURIAN: BASS ISLANDS			
G SHALE			
F SHALE			
F SALT			
E CARBONATE			
D SALT/EQUIVALENT			
C SHALE			
B MARKER			
B EQUIVALENT			
B SALT			
B ANHYDRITE			
A2 CARBONATE			
A2 SALT			
SILURIAN: A2 ANHYDRITE			
A1 CARBONATE			
A1 SALT			
A1 ANHYDRITE			
GUELPH			
ERAMOSA			
GOAT ISLAND			
GASPORT/WIARTON			
DECEW			
ROCHESTER			
IRONDEQUOIT			
REYNALES/FOSSIL HILL			
THOROLD			
GRIMSBY			
CABOT HEAD			
MANITOULIN			
WHIRLPOOL			
ORDOVICIAN: QUEENSTON			
BLUE MOUNTAIN - GEORG BAY			
COLLINGWOOD			
COBOURG			
VERULAM			
KIRKFIELD			
COBOCONK			
GULL RIVER			
SHADOW LAKE			
CAMBRIAN			
PRECAMBRIAN			

GEOLOGY BY T.R. Carter

CTY Lambton TWP Dawn BLK TRAC LOT 19 CON I

WELL NAME Union Dawn 263 Dawn 19-I PERMIT 7119 INIT CLASS NGS

OPERATOR Union Gas Ltd TARGET SAL CUR STATUS NGS

DRILLING DATA				DATES		COORDINATES			SAMPLES	
CONTRACTOR	Shaw Drilling Co. Ltd			PERMIT	1987-04-02	NORTH	335.0	m	TOP	21
RIG TYPE	Cable	DEPTHS		SPUD	1987-05-07	SOUTH		m	BOT	545
CABLE TOP	1.2	KB ELEV	189.9	COMPTD	1987-07-06	EAST	472.0	m	TRAY	9151
BOT	545.5	LOGGER	546.7	OFFCNF	1987-08-05	WEST		m		
ROTRY TOP		DRILLER	545.5	WRKOVR		LAT	42 40 41			
BOT		DEEP END		ABNDND		LONG	82 14 15.5			
DRLG FLD		PLUG BK								

INITIAL GAS RECORD

INTERVAL	FLOW	SIP
150 -	Show	
482 - 545		4500

CASING AND TUBING RECORD

DIAM	WEIGHT	SET AT	HOW SET	RECOV
340	71.4	22.6	SHO	0
273	60.3	146.9	CEM	9.4
219	35.7	370.2	CEM	0
178	32.4	478.0	CEM	0

COMPLETION DATA

GAS 10³m³/d
OIL m³/d
SIP 4500 kPa
FORM Guelph
INTRVL 482-545 m

INITIAL OIL RECORD

INTERVAL	FLOW	DENSITY

LOGGING RECORD

INTERVAL	TYPE	COMPANY
0 - 546.7	GRNL	Computalog
470 - 546	DENL	"
470 - 546.3	CALP	"
0 - 462	CBND	"

PERF ☐ OPEN HOLE ☑

REMARKS

A-2 Shale at 478.5

INITIAL WATER RECORD

INTERVAL	STAT LEV	TYPE
21 -		FRE
184 -	90	SUL

CORING RECORD

INTERVAL	LOCATION	NO	ANN

GEOLOGICAL CONTACTS	TOP	ELEV	THICK
KB /[illegible]	0.0		
DRIFT /[illegible]	1.2		
DEVONIAN: PORT LAMBTON			
KETTLE POINT	23.0		
HAMILTON	79.9		
MARCELLUS			
DUNDEE	147.8		
COLUMBUS			
LUCAS	169.0		
AMHERSTBURG	241.0		
SYLVANIA			
BOIS BLANC	280.0		
SPRINGVALE			
ORISKANY			
SILURIAN: BASS ISLANDS	321.0		
G SHALE	360.0		
F SHALE	366.2		
F SALT			
E CARBONATE	408.1		
D SALT/EQUIVALENT			
C SHALE	433.3		
B MARKER	442.3		
B EQUIVALENT	447.7		
B SALT			
B ANHYDRITE			
A2 CARBONATE	460.0		
A2 SALT			
SILURIAN: A2 ANHYDRITE			
A1 CARBONATE			
A1 SALT			
A1 ANHYDRITE			
GUELPH	482.6		
ERAMOSA			
GOAT ISLAND			
GASPORT/WIARTON			
DECEW			
ROCHESTER			
IRONDEQUOIT			
REYNALES/FOSSIL HILL			
THOROLD			
GRIMSBY			
CABOT HEAD			
MANITOULIN			
WHIRLPOOL			
ORDOVICIAN: QUEENSTON			
BLUE MOUNTAIN - GEORG BAY			
COLLINGWOOD			
COBOURG			
VERULAM			
KIRKFIELD			
COBOCONK			
GULL RIVER			
SHADOW LAKE			
CAMBRIAN			
PRECAMBRIAN			

GEOLOGY BY T.R. Carter

CTY: Lambton TWP: Dawn BLK: TRAC: LOT: 19 CON: I

WELL NAME: Union Dawn No. 259 Dawn 19-I PERMIT: 7057 INIT CLASS: NGS

OPERATOR: Union Gas Ltd TARGET: SAL CUR STATUS: NGS

DRILLING DATA

CONTRACTOR: Shaw Drilling Co. Ltd
RIG TYPE:
CABLE TOP: 1.3
BOT: 548.0
ROTRY TOP:
BOT:
DRLG FLD:
DEPTHS
KB ELEV: 190.5
LOGGER: 547.1
DRILLER: 548.0
DEEP END:
PLUG BK:

DATES

PERMIT: 1986-10-29
SPUD: 1987-01-08
COMPTD: 1987-02-25
OFFCNF: 1987-03-27
WRKOVR:
ABNOND:

COORDINATES

NORTH: m
SOUTH: 167.6 m
EAST: 570.7 m
WEST: m
LAT: 42 40 44
LONG: 82 14 03

SAMPLES

TOP: 22
BOT: 545
TRAY: 9960

INITIAL GAS RECORD

INTERVAL	FLOW	SIP
486 – 548		3000
152 –	Show	
–		
–		
–		
–		

CASING AND TUBING RECORD

DIAM.	WEIGHT	SET AT	HOW SET	RECOV.
339.0	71.5	22.3	SHO	0
273	60.3	148.1	SHO	148.1
219	35.7	371.1	CEM	0
178	34.2	478.8	CEM	0

COMPLETION DATA

GAS: $10^3 m^3/d$
OIL: m^3/d
SIP: 2500 kPa
FORM: Guelph
INTRVL: 486-548 m
m
m

INITIAL OIL RECORD

INTERVAL	FLOW	DENSITY
–		
–		
–		
–		
–		

LOGGING RECORD

INTERVAL	TYPE	COMPANY
0 – 547.1	GRNL	Computalog
470 – 546	DENL	
0 – 460	CBND	
–		
–		
–		
–		

PERF ☐ OPEN HOLE ☐

REMARKS

INITIAL WATER RECORD

INTERVAL	STAT LEV	TYPE
19 –		FRE
168 –	90	SUL
–		
–		
–		
–		

CORING RECORD

INTERVAL	LOCATION	NO.	mm
–			
–			
–			
–			
–			

GEOLOGICAL CONTACTS	TOP	ELEV	THICK
KB / [illegible]	0.0		
DRIFT / [illegible]	1.3		
DEVONIAN: PORT LAMBTON			
KETTLE POINT	22.0		
HAMILTON	78.8		
MARCELLUS			
DUNDEE	144.7		
COLUMBUS			
LUCAS	168.0		
AMHERSTBURG	238.0		
SYLVANIA			
BOIS BLANC	289.0		
SPRINGVALE			
ORISKANY			
SILURIAN: BASS ISLANDS	321.0		
G SHALE	360.0		
F SHALE	366.1		
F SALT			
E CARBONATE	407.6		
D SALT/EQUIVALENT	430.0		
C SHALE	431.0		
B MARKER	441.7		
B EQUIVALENT	447.0		
B SALT			
B ANHYDRITE			
A2 CARBONATE	457.0		
A2 SALT			
SILURIAN: A2 ANHYDRITE			
A1 CARBONATE			
A1 SALT			
A1 ANHYDRITE			
GUELPH	481.0		
ERAMOSA			
GOAT ISLAND			
GASPORT/WIARTON			
DECEW			
ROCHESTER			
IRONDEQUOIT			
REYNALES/FOSSIL HILL			
THOROLD			
GRIMSBY			
CABOT HEAD			
MANITOULIN			
WHIRLPOOL			
ORDOVICIAN: QUEENSTON			
BLUE MOUNTAIN - GEORG. BAY			
COLLINGWOOD			
COBOURG			
VERULAM			
KIRKFIELD			
COBOCONK			
GULL RIVER			
SHADOW LAKE			
CAMBRIAN			
PRECAMBRIAN			

GEOLOGY BY T.R. Carter

CTY: Lambton TWP: Dawn BLK: TRAC: LOT: 19 CON: I

WELL NAME: Union Dawn No. 260 Dawn 19-I PERMIT: 7116 INIT CLASS: NGS

OPERATOR: Union Gas Ltd TARGET: SAL CUR STATUS: NGS

DRILLING DATA

CONTRACTOR: Shaw Drilling Co. Ltd
RIG TYPE: Cable
CABLE TOP: 1.2
BOT: 545.0
ROTRY TOP:
BOT:
DRLG FLD:
DEPTHS
KB ELEV: 190.0
LOGGER: 543.0
DRILLER: 545.0
DEEP END:
PLUG BK:

DATES

PERMIT: 1987-04-02
SPUD: 1987-04-23
COMPTD: 1987-06-10
OFFCNF: 1987-07-10
WRKOVR:
ABNOND:

COORDINATES

NORTH: 259.0 m
SOUTH: m
EAST: 640.0 m
WEST: m
LAT: 42 40 39
LONG: 82 14 09

SAMPLES

TOP: 22
BOT: 547
TRAY: 8247

INITIAL GAS RECORD

INTERVAL	FLOW	SIP
152 –	Show	
463 –	Show	
492 – 545		3500
–		
–		
–		

CASING AND TUBING RECORD

DIAM.	WEIGHT	SET AT	HOW SET	RECOV.
340	71.5	22.3	SHO	0
273	60.3	148.0	SHO	148.0
219	35.7	380.5	CEM	0
178	29.7	487.6	CEM	0

COMPLETION DATA

GAS: $10^3 m^3/d$
OIL: m^3/d
SIP: kPa
FORM: Guelph
INTRVL: 492-545 m
m
m

INITIAL OIL RECORD

INTERVAL	FLOW	DENSITY
–		
–		
–		
–		
–		

LOGGING RECORD

INTERVAL	TYPE	COMPANY
0 – 543	GRNL	Computalog
475 – 543	DENL	"
0 – 480	CBND	"
475 – 543	CALP	"
–		
–		
–		

PERF ☐ OPEN HOLE ☐

REMARKS

INITIAL WATER RECORD

INTERVAL	STAT LEV	TYPE
20 –		FRE
181 –	45	SUL
–		
–		
–		
–		

CORING RECORD

INTERVAL	LOCATION	NO.	mm
–			
–			
–			
–			
–			

GEOLOGICAL CONTACTS	TOP	ELEV	THICK
KB / [illegible]	0.0		
DRIFT / [illegible]	1.2		
DEVONIAN: PORT LAMBTON			
KETTLE POINT	22.0		
HAMILTON	78.5		
MARCELLUS			
DUNDEE	146.3		
COLUMBUS			
LUCAS	172.0		
AMHERSTBURG	243.0		
SYLVANIA			
BOIS BLANC	287.0		
SPRINGVALE			
ORISKANY			
SILURIAN: BASS ISLANDS	329.0		
G SHALE	364.0		
F SHALE	370.6		
F SALT			
E CARBONATE	412.9		
D SALT/EQUIVALENT			
C SHALE	437.7		
B MARKER	447.2		
B EQUIVALENT	453.0		
B SALT			
B ANHYDRITE			
A2 CARBONATE	462.0		
A2 SALT			
SILURIAN: A2 ANHYDRITE	490.0		
A1 CARBONATE			
A1 SALT			
A1 ANHYDRITE			
GUELPH	491.0		
ERAMOSA			
GOAT ISLAND			
GASPORT/WIARTON			
DECEW			
ROCHESTER			
IRONDEQUOIT			
REYNALES/FOSSIL HILL			
THOROLD			
GRIMSBY			
CABOT HEAD			
MANITOULIN			
WHIRLPOOL			
ORDOVICIAN: QUEENSTON			
BLUE MOUNTAIN - GEORG. BAY			
COLLINGWOOD			
COBOURG			
VERULAM			
KIRKFIELD			
COBOCONK			
GULL RIVER			
SHADOW LAKE			
CAMBRIAN			
PRECAMBRIAN			

GEOLOGY BY T.R. Carter

T.R. Carter

CTY Lambton TWP Dawn BLK TRAC LOT 19 CON I
WELL NAME Union Dawn 261 Dawn 19-1 PERMIT 7117 INIT CLASS NGS
OPERATOR Union Gas Ltd TARGET SAL CUR STATUS NGS

DRILLING DATA
CONTRACTOR James Newport Drilling Ltd
RIG TYPE Cable
CABLE TOP 1.2
BOT 545.0
ROTRY TOP
BOT
DRLG FLD

DEPTHS
KB ELEV 189.9
LOGGER 546.4
DRILLER 545.0
DEEP END
PLUG BK

DATES
PERMIT 1987-04-02
SPUD 1987-04-20
COMPTD 1987-06-11
OFFCNF 1987-07-11
WRKOVR
ABNOND

COORDINATES
NORTH 76.0 m
SOUTH m
EAST 518.0 m
WEST m
LAT 42 40 32
LONG 82 14 15

SAMPLES
TOP 22
BOT 545
TRAY 9965

INITIAL GAS RECORD

INTERVAL	FLOW	SIP
467 –	Show	
492 – 545		3000
–		
–		
–		
–		

CASING AND TUBING RECORD

DIAM	WEIGHT	SET AT	HOW SET	RECOV
340	71.4	23.0	SHO	0
273	60.3	147.7	SHO	147.7
219	35.7	372.8	CEM	0
178	29.7	476.7	CEM	0

COMPLETION DATA
GAS 10³m³/d
OIL m³/d
SIP kPa
FORM Guelph
INTRVL 492-545 m
m
m

INITIAL OIL RECORD

INTERVAL	FLOW	DENSITY
–		
–		
–		
–		
–		

LOGGING RECORD

INTERVAL	TYPE	COMPANY
0 – 546.4	GRNL	Computalog
475 – 546.4	DENL	"
0 – 464.0	CBND	"
475 – 546.0	CALP	"
–		
–		
–		

PERF ☐ OPEN HOLE ☑
REMARKS

INITIAL WATER RECORD

INTERVAL	STAT LEV	TYPE
20		FRE
184 – 187	53	SUL
–		
–		
–		
–		

CORING RECORD

INTERVAL	LOCATION	NO	mm
–			
–			
–			
–			
–			

GEOLOGICAL CONTACTS	TOP	ELEV	THICK
KB /DRILLERS DEPTH/	0.0		
DRIFT /LOWER BOUNDARY/	1.2		
DEVONIAN: PORT LAMBTON			
KETTLE POINT	22.0		
HAMILTON	78.0		
MARCELLUS			
DUNDEE	146.6		
COLUMBUS			
LUCAS	178.0		
AMHERSTBURG	245.0		
SYLVANIA			
BOIS BLANC	290.0		
SPRINGVALE			
ORISKANY			
SILURIAN: BASS ISLANDS	325.0		
G SHALE	368.5		
F SHALE	372.1		
F SALT			
E CARBONATE	413.3		
D SALT/EQUIVALENT			
C SHALE	436.6		
B MARKER	448.0		
B EQUIVALENT	453.2		
B SALT			
B ANHYDRITE			
A2 CARBONATE	464.2		
A2 SALT			
SILURIAN: A2 ANHYDRITE			
A1 CARBONATE			
A1 SALT			
A1 ANHYDRITE			
GUELPH	489.5		
ERAMOSA			
GOAT ISLAND			
GASPORT/WIARTON			
DECEW			
ROCHESTER			
IRONDEQUOIT			
REYNALES/FOSSIL HILL			
THOROLD			
GRIMSBY			
CABOT HEAD			
MANITOULIN			
WHIRLPOOL			
ORDOVICIAN: QUEENSTON			
BLUE MOUNTAIN GEORG BAY			
COLLINGWOOD			
COBOURG			
VERULAM			
KIRKFIELD			
COBOCONK			
GULL RIVER			
SHADOW LAKE			
CAMBRIAN			
PRECAMBRIAN			

GEOLOGY BY T.R. Carter

CTY Lambton TWP Dawn BLK TRAC LOT 19 CON I
WELL NAME Union Dawn 262 Dawn 19-1 PERMIT 7118 INIT CLASS NGS
OPERATOR Union Gas Ltd TARGET SAL CUR STATUS NGS

DRILLING DATA
CONTRACTOR James Newport Drilling Ltd
RIG TYPE Cable
CABLE TOP 1.2
BOT 545.0
ROTRY TOP
BOT
DRLG FLD

DEPTHS
KB ELEV 189.8
LOGGER 544.0
DRILLER 545.0
DEEP END
PLUG BK

DATES
PERMIT 1987-04-02
SPUD 1987-05-06
COMPTD 1987-06-22
OFFCNF 1987-07-22
WRKOVR
ABNOND

COORDINATES
NORTH 107.0 m
SOUTH m
EAST 366.0 m
WEST m
LAT 42 40 34
LONG 82 14 19

SAMPLES
TOP 22
BOT 545
TRAY 9180

INITIAL GAS RECORD

INTERVAL	FLOW	SIP
458 –	Show	
485 – 545		3350
–		
–		
–		
–		

CASING AND TUBING RECORD

DIAM	WEIGHT	SET AT	HOW SET	RECOV
340	71.4	22.0	SHO	0
273	60.3	146.7	SHO	146.7
219	35.7	372.5	CEM	0
178	32.4	477.5	CEM	0

COMPLETION DATA
GAS 10³m³/d
OIL m³/d
SIP 3350 kPa
FORM Guelph
INTRVL 485-545 m
m
m

INITIAL OIL RECORD

INTERVAL	FLOW	DENSITY
–		
–		
–		
–		
–		

LOGGING RECORD

INTERVAL	TYPE	COMPANY
0 – 544	GRNL	Computalog
473 – 543.5	DENL	"
0 – 465	CBND	"
–		
–		
–		
–		

PERF ☐ OPEN HOLE ☑
REMARKS

INITIAL WATER RECORD

INTERVAL	STAT LEV	TYPE
21 –		FRE
182 –	45	SUL
–		
–		
–		
–		

CORING RECORD

INTERVAL	LOCATION	NO	mm
–			
–			
–			
–			
–			

GEOLOGICAL CONTACTS	TOP	ELEV	THICK
KB /DRILLERS DEPTH/	0.0		
DRIFT /LOWER BOUNDARY/	1.2		
DEVONIAN: PORT LAMBTON			
KETTLE POINT	22.0		
HAMILTON	77.3		
MARCELLUS			
DUNDEE	145.7		
COLUMBUS			
LUCAS	178.0		
AMHERSTBURG	241.0		
SYLVANIA			
BOIS BLANC	290.0		
SPRINGVALE			
ORISKANY			
SILURIAN: BASS ISLANDS	319.0		
G SHALE	360.8		
F SHALE	366.9		
F SALT			
E CARBONATE	408.0		
D SALT/EQUIVALENT			
C SHALE	430.7		
B MARKER	441.2		
B EQUIVALENT	446.8		
B SALT			
B ANHYDRITE			
A2 CARBONATE	458.3		
A2 SALT			
SILURIAN: A2 ANHYDRITE			
A1 CARBONATE			
A1 SALT			
A1 ANHYDRITE			
GUELPH	483.5		
ERAMOSA			
GOAT ISLAND			
GASPORT/WIARTON			
DECEW			
ROCHESTER			
IRONDEQUOIT			
REYNALES/FOSSIL HILL			
THOROLD			
GRIMSBY			
CABOT HEAD			
MANITOULIN			
WHIRLPOOL			
ORDOVICIAN: QUEENSTON			
BLUE MOUNTAIN - GEORG BAY			
COLLINGWOOD			
COBOURG			
VERULAM			
KIRKFIELD			
COBOCONK			
GULL RIVER			
SHADOW LAKE			
CAMBRIAN			
PRECAMBRIAN			

GEOLOGY BY T.R. Carter

CTY Lambton TWP Dawn BLK TRAC 4 LOT 23 CON I

WELL NAME Forbes 44 Dawn 4-23-I PERMIT 7173 INIT CLASS DEV

OPERATOR Forbes Resources Inc. TARGET SAL CUR STATUS OPGS

DRILLING DATA

CONTRACTOR James Newport Drilling Ltd

RIG TYPE Cable DEPTHS

CABLE TOP 1.2 KB ELEV 191.7

BOT 602 LOGGER 602.1

ROTRY TOP DRILLER 602

BOT DEEP END

DRLG FLD PLUG BK

DATES

PERMIT 1987-08-12

SPUD 1987-08-14

COMPTD 1987-09-11

OFFCNF 1987-10-11

WRKOVR

ABNDND

COORDINATES

NORTH 195.1 m

SOUTH m

EAST m

WEST 563.9 m

LAT 42 41 57

LONG 82 13 59.5

SAMPLES

TOP 19

BOT 602

TRAY 9247

INITIAL GAS RECORD

INTERVAL	FLOW	SIP
594 –		
–		
–		
–		
–		
–		

INITIAL OIL RECORD

INTERVAL	FLOW	DENSITY
593 – 595		
–		
–		
–		
–		

INITIAL WATER RECORD

INTERVAL	STAT LEV	TYPE
18 –		FRE
191 – 194	70	SUL
330 –	53	SUL
–		
–		

CASING AND TUBING RECORD

DIAM	WEIGHT	SET AT	HOW SET	RECOV
273	60.3	19.5	SHO	
219	35.7	159.5	SHO	159.5
177	29.8	357.5	CEM	
140	23.4	600.1	CEM	

LOGGING RECORD

INTERVAL	TYPE	COMPANY
425 – 602	GRNL	Computalog
535 – 602	DENL	"
500 – 602	CORR	"
–		
–		
–		

CORING RECORD

INTERVAL	LOCATION	NO	MM
–			
–			
–			
–			
–			

COMPLETION DATA

GAS 10 ^{3}m^3/d

OIL m^3/d

SIP kPa

FORM

INTRVL 592.5-596.5 m

m

m

PERF ☑ OPEN HOLE ☐

REMARKS

A-2 Shale at 533.3

GEOLOGICAL CONTACTS	TOP	ELEV	THICK
KB (MAKE LEVEL)	0.0		
DRIFT (LAKE TECK KB)	1.2		
DEVONIAN: PORT LAMBTON			
KETTLE POINT	19.0		
HAMILTON	90.0		
MARCELLUS			
DUNDEE	157.0		
COLUMBUS			
LUCAS	177.0		
AMHERSTBURG	242.0		
SYLVANIA			
BOIS BLANC	289.0		
SPRINGVALE			
ORISKANY			
SILURIAN: BASS ISLANDS	298.5		
G SHALE	340.0		
F SHALE	349.0		
F SALT			
E CARBONATE	391.5		
D SALT/EQUIVALENT			
C SHALE	419.1		
B MARKER	431.8		
B EQUIVALENT	438.0		
B SALT	444.0		
B ANHYDRITE			
A2 CARBONATE	499.0		
A2 SALT	541.8		
SILURIAN: A2 ANHYDRITE	555.0		
A1 CARBONATE	557.0		
A1 SALT			
A1 ANHYDRITE	589.8		
GUELPH	590.8		
ERAMOSA			
GOAT ISLAND	599.5		
GASPORT/WIARTON			
DECEW			
ROCHESTER			
IRONDEQUOIT			
REYNALES/FOSSIL HILL			
THOROLD			
GRIMSBY			
CABOT HEAD			
MANITOULIN			
WHIRLPOOL			
ORDOVICIAN: QUEENSTON			
BLUE MOUNTAIN - GEORG BAY			
COLLINGWOOD			
COBOURG			
VERULAM			
KIRKFIELD			
COBOCONK			
GULL RIVER			
SHADOW LAKE			
CAMBRIAN			
PRECAMBRIAN			

GEOLOGY BY T.R. Carter

CTY Lambton TWP Dawn BLK TRAC 8 LOT 27 CON II

WELL NAME Forbes #19, Dawn 8-27-II PERMIT 7177 INIT CLASS NPW

OPERATOR Frank Vye TARGET SAL CUR STATUS OS-ABD

DRILLING DATA

CONTRACTOR Ron Smith Well Drilling Ltd

RIG TYPE Cable DEPTHS

CABLE TOP 0.7 KB ELEV 191.3

BOT 610.5 LOGGER

ROTRY TOP DRILLER 610.5

BOT DEEP END

DRLG FLD PLUG BK

DATES

PERMIT 1987-08-20

SPUD 1987-08-27

COMPTD 1987-10-30

OFFCNF 1988-10-30

WRKOVR

ABNDND 1989-10-16

COORDINATES

NORTH 155.0 m

SOUTH m

EAST 116.7 m

WEST m

LAT 42 43 14

LONG 82 13 26

SAMPLES

TOP

BOT

TRAY

INITIAL GAS RECORD

INTERVAL	FLOW	SIP
–		
–		
–		
–		
–		
–		

INITIAL OIL RECORD

INTERVAL	FLOW	DENSITY
603.5 – 607.7		
–		
–		
–		
–		

INITIAL WATER RECORD

INTERVAL	STAT LEV	TYPE
20 – 22		FRE
167 –	43	SUL
600 –		SAL
–		
–		

CASING AND TUBING RECORD

DIAM	WEIGHT	SET AT	HOW SET	RECOV
273		25.6	SHO	0
178		330.0	CEM	0
139		601.7	CEM	0

LOGGING RECORD

INTERVAL	TYPE	COMPANY
435.9 – 610.5	GRNL	Computalog
485.8 – 610.5	DENL	"
–		
–		
–		
–		

CORING RECORD

INTERVAL	LOCATION	NO	MM
–			
–			
–			
–			
–			

COMPLETION DATA

GAS 10 ^{3}m^3/d

OIL m^3/d

SIP kPa

FORM Guelph

INTRVL 603.5-607.7 m

m

m

PERF ☐ OPEN HOLE ☑

REMARKS

Re-entry at abandoned well - no samples. Originally drilled under Permit 5395. A-2 Shale at 534.0

GEOLOGICAL CONTACTS	TOP	ELEV	THICK
KB (MAKE LEVEL)	0.0		
DRIFT (LAKE TECK KB)	0.7		
DEVONIAN: PORT LAMBTON			
KETTLE POINT	21.0		
HAMILTON	68.6		
MARCELLUS			
DUNDEE	136.5		
COLUMBUS			
LUCAS	158.0		
AMHERSTBURG	233.5		
SYLVANIA			
BOIS BLANC	267.0		
SPRINGVALE			
ORISKANY			
SILURIAN: BASS ISLANDS	283.0		
G SHALE	327.0		
F SHALE	335.0		
F SALT			
E CARBONATE	380.0		
D SALT/EQUIVALENT			
C SHALE	404.5		
B MARKER	419.4		
B EQUIVALENT			
B SALT	425.5		
B ANHYDRITE			
A2 CARBONATE	499.6		
A2 SALT	541.9		
SILURIAN: A2 ANHYDRITE	560.2		
A1 CARBONATE	560.8		
A1 SALT			
A1 ANHYDRITE	596.2		
GUELPH	603.2		
ERAMOSA			
GOAT ISLAND	607.2		
GASPORT/WIARTON			
DECEW			
ROCHESTER			
IRONDEQUOIT			
REYNALES/FOSSIL HILL			
THOROLD			
GRIMSBY			
CABOT HEAD			
MANITOULIN			
WHIRLPOOL			
ORDOVICIAN: QUEENSTON			
BLUE MOUNTAIN - GEORG BAY			
COLLINGWOOD			
COBOURG			
VERULAM			
KIRKFIELD			
COBOCONK			
GULL RIVER			
SHADOW LAKE			
CAMBRIAN			
PRECAMBRIAN			

GEOLOGY BY T.R. Carter

T.R. Carter

CTY Lambton TWP Dawn BLK TRAC 4 LOT 29 CON II

WELL NAME Bryant-Union et al, Dawn 4-29-II PERMIT 7101 INIT CLASS DEV

OPERATOR R.G. Bryant Energy Associates Inc. TARGET SAL CUR STATUS OP-GS

DRILLING DATA

CONTRACTOR

RIG TYPE Cable

CABLE TOP 1.2 DEPTHS

BOT 599.0 KB ELEV 193.6

LOGGER 597.0

ROTRY TOP DRILLER 599.0

BOT DEEP END

DRLG FLD PLUG BK

DATES

PERMIT 1987-01-06

SPUD 1987-02-06

COMPTD 1987-03-09

OFFCNF 1987-04-08

WRKOVR

ABNOND

COORDINATES

NORTH 113.7 m

SOUTH m

EAST m

WEST 555.5 m

LAT 42 43 52

LONG 82 12 54

SAMPLES

TOP 20

BOT 598

TRAY 9701

INITIAL GAS RECORD

INTERVAL	FLOW	SIP
586.4 - 588.5	3.25	3448
–		
–		
–		
–		
–		

CASING AND TUBING RECORD

DIAM	WEIGHT	SET AT	HOW SET	RECOV
274	60.3	21.6	SHO	0
219	35.7	129.4	SHO	129.4
178	29.8	335.7	CEM	0
114	15.6	598.7	CEM	0
60	6.8	592.5	HAN	0

COMPLETION DATA

GAS 3.25 10³m³/d

OIL m³/d

SIP 3448 kPa

FORM Guelph

INTRVL 586.5-599.0 m

m

m

INITIAL OIL RECORD

INTERVAL	FLOW	DENSITY
588.5 - 599.0		
–		
–		
–		
–		
–		

LOGGING RECORD

INTERVAL	TYPE	COMPANY
0 - 597.0	GRL	Computalog
490 - 596.3	DENL	"
525.0 - 595.3	CMPL	"
–		
–		
–		

PERF ☐ OPEN HOLE ☐

REMARKS

A-2 Shale at 535.5

INITIAL WATER RECORD

INTERVAL	STAT LEV	TYPE
20 -	10	FRE
166 -	60	SUL
–		
–		
–		
–		

CORING RECORD

INTERVAL	LOCATION	NO	mm
–			
–			
–			
–			
–			

GEOLOGICAL CONTACTS	TOP	ELEV	THICK
KB	0.0		
DRIFT	1.2		
DEVONIAN: PORT LAMBTON			
DEVONIAN: KETTLE POINT	21.5		
DEVONIAN: HAMILTON	56.3		
DEVONIAN: MARCELLUS			
DEVONIAN: DUNDEE	128.2		
DEVONIAN: COLUMBUS			
DEVONIAN: LUCAS	152.0		
DEVONIAN: AMHERSTBURG	217.0		
DEVONIAN: SYLVANIA			
DEVONIAN: BOIS BLANC	252.0		
DEVONIAN: SPRINGVALE	281.0		
DEVONIAN: ORISKANY			
SILURIAN: BASS ISLANDS	284.0		
SILURIAN: G SHALE	332.8		
SILURIAN: F SHALE	339.3		
SILURIAN: F SALT			
SILURIAN: E CARBONATE	382.1		
SILURIAN: D SALT/EQUIVALENT	406.0		
SILURIAN: C SHALE	411.1		
SILURIAN: B MARKER	422.7		
SILURIAN: B EQUIVALENT			
SILURIAN: B SALT	429.2		
SILURIAN: B ANHYDRITE			
SILURIAN: A2 CARBONATE	501.8		
SILURIAN: A2 SALT	543.5		
SILURIAN: A2 ANHYDRITE	557.0		
SILURIAN: A1 CARBONATE	558.2		
SILURIAN: A1 SALT			
SILURIAN: A1 ANHYDRITE			
SILURIAN: GUELPH	584.9		
SILURIAN: ERAMOSA			
SILURIAN: GOAT ISLAND			
SILURIAN: GASPORT/WIARTON			
SILURIAN: DECEW			
SILURIAN: ROCHESTER			
SILURIAN: IRONDEQUOIT			
SILURIAN: REYNALES/FOSSIL HILL			
SILURIAN: THOROLD			
SILURIAN: GRIMSBY			
SILURIAN: CABOT HEAD			
SILURIAN: MANITOULIN			
SILURIAN: WHIRLPOOL			
ORDOVICIAN: QUEENSTON			
ORDOVICIAN: BLUE MOUNTAIN GEORG BAY			
ORDOVICIAN: COLLINGWOOD			
ORDOVICIAN: COBOURG			
ORDOVICIAN: VERULAM			
ORDOVICIAN: KIRKFIELD			
ORDOVICIAN: COBOCONK			
ORDOVICIAN: GULL RIVER			
ORDOVICIAN: SHADOW LAKE			
CAMBRIAN			
PRECAMBRIAN			

GEOLOGY BY T.R. Carter

CTY Lambton TWP Dawn BLK TRAC 3 LOT 30 CON III

WELL NAME P-R & Associates 3 Dawn 3-30-III PERMIT 7150 INIT CLASS NEW

OPERATOR Proto-Resources & Associates TARGET SAL CUR STATUS DH-ABD

DRILLING DATA

CONTRACTOR James Newport Drilling Ltd

RIG TYPE Cable

CABLE TOP 1.4 DEPTHS

BOT 615.0 KB ELEV 196.3

LOGGER

ROTRY TOP DRILLER 615.0

BOT DEEP END

DRLG FLD PLUG BK

DATES

PERMIT 1987-06-24

SPUD 1987-07-02

COMPTD 1987-07-28

OFFCNF 1988-07-28

WRKOVR

ABNOND 1987-08-04

COORDINATES

NORTH m

SOUTH 181.5 m

EAST m

WEST 514.4 m

LAT 42 44 20.5

LONG 82 11 51

SAMPLES

TOP 20

BOT 615

TRAY 9191

INITIAL GAS RECORD

INTERVAL	FLOW	SIP
–		
–		
–		
–		
–		
–		

CASING AND TUBING RECORD

DIAM	WEIGHT	SET AT	HOW SET	RECOV
273	60.3	20.0	SHO	20.0
219	35.7	122.7	SHO	122.7
178	29.8	339.0	CEM	237.0

COMPLETION DATA

GAS 10³m³/d

OIL m³/d

SIP kPa

FORM

INTRVL m

m

m

INITIAL OIL RECORD

INTERVAL	FLOW	DENSITY
–		
–		
–		
–		
–		
–		

LOGGING RECORD

INTERVAL	TYPE	COMPANY
–		
–		
–		
–		
–		
–		

PERF ☐ OPEN HOLE ☐

REMARKS

INITIAL WATER RECORD

INTERVAL	STAT LEV	TYPE
19 –		FRE
136 - 137	50	SUL
–		
–		
–		
–		

CORING RECORD

INTERVAL	LOCATION	NO	mm
–			
–			
–			
–			
–			

GEOLOGICAL CONTACTS	TOP	ELEV	THICK
KB	0.0		
DRIFT	1.4		
DEVONIAN: PORT LAMBTON			
DEVONIAN: KETTLE POINT	19.0		
DEVONIAN: HAMILTON	49.0		
DEVONIAN: MARCELLUS			
DEVONIAN: DUNDEE	122.5		
DEVONIAN: COLUMBUS			
DEVONIAN: LUCAS	145.0		
DEVONIAN: AMHERSTBURG	213.0		
DEVONIAN: SYLVANIA			
DEVONIAN: BOIS BLANC	261.0		
DEVONIAN: SPRINGVALE			
DEVONIAN: ORISKANY			
SILURIAN: BASS ISLANDS	284.0		
SILURIAN: G SHALE	328.0		
SILURIAN: F SHALE	335.0		
SILURIAN: F SALT			
SILURIAN: E CARBONATE	377.5		
SILURIAN: D SALT/EQUIVALENT	401.0		
SILURIAN: C SHALE	407.0		
SILURIAN: B MARKER	420.0		
SILURIAN: B EQUIVALENT			
SILURIAN: B SALT	428.0		
SILURIAN: B ANHYDRITE	498.5		
SILURIAN: A2 CARBONATE	500.0		
SILURIAN: A2 SALT	544.0		
SILURIAN: A2 ANHYDRITE	562.0		
SILURIAN: A1 CARBONATE	566.0		
SILURIAN: A1 SALT			
SILURIAN: A1 ANHYDRITE	601.5		
SILURIAN: GUELPH	606.0		
SILURIAN: ERAMOSA			
SILURIAN: GOAT ISLAND	612.0		
SILURIAN: GASPORT/WIARTON			
SILURIAN: DECEW			
SILURIAN: ROCHESTER			
SILURIAN: IRONDEQUOIT			
SILURIAN: REYNALES/FOSSIL HILL			
SILURIAN: THOROLD			
SILURIAN: GRIMSBY			
SILURIAN: CABOT HEAD			
SILURIAN: MANITOULIN			
SILURIAN: WHIRLPOOL			
ORDOVICIAN: QUEENSTON			
ORDOVICIAN: BLUE MOUNTAIN GEORG BAY			
ORDOVICIAN: COLLINGWOOD			
ORDOVICIAN: COBOURG			
ORDOVICIAN: VERULAM			
ORDOVICIAN: KIRKFIELD			
ORDOVICIAN: COBOCONK			
ORDOVICIAN: GULL RIVER			
ORDOVICIAN: SHADOW LAKE			
CAMBRIAN			
PRECAMBRIAN			

GEOLOGY BY T.R. Carter

CTY Lambton TWP Dawn BLK TRAC 1 LOT 31 CON XIV

WELL NAME Philon Dawn 1-31-XIV PERMIT 7189 INIT CLASS DEV

OPERATOR Philon Energy Inc. TARGET SAL CUR STATUS GSOS-ABD

DRILLING DATA

CONTRACTOR James Newport Drilling Ltd
RIG TYPE Cable
CABLE TOP 1.2 BOT 524.0
ROTRY TOP BOT
DRLG FLD
DEPTHS
KB ELEV 206.6
LOGGER 523.2
DRILLER 524.0
DEEP END
PLUG BK

DATES

PERMIT 1987-09-18
SPUD 1987-09-22
COMPTD 1987-10-20
OFFCNF 1987-11-19
WRKOVR
ABNDND 1989-03-17

COORDINATES

NORTH 106.7 m
SOUTH m
EAST m
WEST 198.1 m
LAT 42 44 12
LONG 82 00 30

SAMPLES

TOP 21
BOT 524
TRAY 9075

INITIAL GAS RECORD

INTERVAL	FLOW	SIP
518.0 – 521.0	0.28	5654

CASING AND TUBING RECORD

DIAM	WEIGHT	SET AT	HOW SET	RECOV
273	60.3	22.5	SHO	1.0
219	35.7	107.7	SHO	107.7
178	29.8	317.1	CEM	250.0

COMPLETION DATA

GAS 10³m³/d
OIL m³/d
SIP kPa
FORM
INTRVL m

INITIAL OIL RECORD

INTERVAL	FLOW	DENSITY
521.0 – 522.0		

LOGGING RECORD

INTERVAL	TYPE	COMPANY
0 – 523.0	GRNL	Computalog
471 – 523.0	DENL	Computalog

PERF ☐ OPEN HOLE ☐

REMARKS

A-2 Shale at 507.6

INITIAL WATER RECORD

INTERVAL	STAT LEV	TYPE
19.0 –		FRE
140.0 – 141.0	75	SUL
190.0 –	55	SUL

CORING RECORD

INTERVAL	LOCATION	NO	ANAL

GEOLOGICAL CONTACTS	TOP	ELEV	THICK
KB / [illegible]	0.0		
DRIFT / [illegible]	1.2		
DEVONIAN: PORT LAMBTON			
DEVONIAN: KETTLE POINT	21.1		
DEVONIAN: HAMILTON	34.0		
DEVONIAN: MARCELLUS			
DEVONIAN: DUNDEE	105.0		
DEVONIAN: COLUMBUS			
DEVONIAN: LUCAS	138.0		
DEVONIAN: AMHERSTBURG	187.0		
DEVONIAN: SYLVANIA			
DEVONIAN: BOIS BLANC	248.0		
DEVONIAN: SPRINGVALE			
DEVONIAN: ORISKANY			
SILURIAN: BASS ISLANDS	266.0		
SILURIAN: G SHALE	307.2		
SILURIAN: F SHALE	315.5		
SILURIAN: F SALT			
SILURIAN: E CARBONATE	363.0		
SILURIAN: D SALT/EQUIVALENT			
SILURIAN: C SHALE	380.0		
SILURIAN: B MARKER	397.0		
SILURIAN: B EQUIVALENT	402.2		
SILURIAN: B SALT	407.8		
SILURIAN: B ANHYDRITE			
SILURIAN: A2 CARBONATE	475.0		
SILURIAN: A2 SALT			
SILURIAN: A2 ANHYDRITE	515.7		
SILURIAN: A1 CARBONATE	519.1		
SILURIAN: A1 SALT			
SILURIAN: A1 ANHYDRITE			
SILURIAN: GUELPH			
SILURIAN: ERAMOSA			
SILURIAN: GOAT ISLAND			
SILURIAN: GASPORT/WIARTON			
SILURIAN: DECEW			
SILURIAN: ROCHESTER			
SILURIAN: IRONDEQUOIT			
SILURIAN: REYNALES/FOSSIL HILL			
SILURIAN: THOROLD			
SILURIAN: GRIMSBY			
SILURIAN: CABOT HEAD			
SILURIAN: MANITOULIN			
SILURIAN: WHIRLPOOL			
ORDOVICIAN: QUEENSTON			
ORDOVICIAN: BLUE MOUNTAIN - GEORG BAY			
ORDOVICIAN: COLLINGWOOD			
ORDOVICIAN: COBOURG			
ORDOVICIAN: VERULAM			
ORDOVICIAN: KIRKFIELD			
ORDOVICIAN: COBOCONK			
ORDOVICIAN: GULL RIVER			
ORDOVICIAN: SHADOW LAKE			
CAMBRIAN			
PRECAMBRIAN			

GEOLOGY BY T.R. Carter

CTY Lambton TWP Dawn BLK TRAC 2 LOT 32 CON VIII

WELL NAME Ram 95 Dawn 2-32-VIII PERMIT 7098 INIT CLASS DEV

OPERATOR Ram Petroleums Ltd TARGET SAL CUR STATUS GP-OP

DRILLING DATA

CONTRACTOR Rawlings Drilling Co.
RIG TYPE Cable
CABLE TOP 1.2 BOT 562.4
ROTRY TOP BOT
DRLG FLD
DEPTHS
KB ELEV 203.1
LOGGER 559.8
DRILLER 562.4
DEEP END
PLUG BK 554.0

DATES

PERMIT 1986-12-23
SPUD 1987-01-26
COMPTD 1987-03-30
OFFCNF 1987-04-29
WRKOVR
ABNDND

COORDINATES

NORTH m
SOUTH 294.3 m
EAST m
WEST 265.2 m
LAT 42 44 50
LONG 82 06 35

SAMPLES

TOP 19.8
BOT 562.4
TRAY 9686

INITIAL GAS RECORD

INTERVAL	FLOW	SIP
487.7 – 490.7	SHOW	140
523.0 – 525.0	SHOW	4688
560.0 –	SHOW	4826

CASING AND TUBING RECORD

DIAM	WEIGHT	SET AT	HOW SET	RECOV
340		23	SHO	0
219	41.7	336.5	SHO	179.5
178	29.8	512.4	CEM	0
114	14.1	560.8	CEM	0
60	7.0	551.3		

COMPLETION DATA

GAS 10³m³/d
OIL m³/d
SIP kPa
FORM Guelph
INTRVL m

INITIAL OIL RECORD

INTERVAL	FLOW	DENSITY

LOGGING RECORD

INTERVAL	TYPE	COMPANY
21.0 – 559.2	GRNL	Dreg.-Atla
508.5 – 559.2	DENL	"
511.5 – 559.2	DIFS	"

PERF ☐ OPEN HOLE ☐

REMARKS

A-2 Shale at 512.3

Anhydrite in Guelph from 517 to 523m

INITIAL WATER RECORD

INTERVAL	STAT LEV	TYPE
18.0 –		FRE
149.3 –	45.7	SUL
559.6 –		SAL

CORING RECORD

INTERVAL	LOCATION	NO	ANAL

GEOLOGICAL CONTACTS	TOP	ELEV	THICK
KB / [illegible]	0.0		
DRIFT / [illegible]	1.2		
DEVONIAN: PORT LAMBTON			
DEVONIAN: KETTLE POINT	18.3		
DEVONIAN: HAMILTON	30.2		
DEVONIAN: MARCELLUS			
DEVONIAN: DUNDEE	105.2		
DEVONIAN: COLUMBUS			
DEVONIAN: LUCAS	140.2		
DEVONIAN: AMHERSTBURG	204.2		
DEVONIAN: SYLVANIA			
DEVONIAN: BOIS BLANC	256.0		
DEVONIAN: SPRINGVALE			
DEVONIAN: ORISKANY			
SILURIAN: BASS ISLANDS	270.4		
SILURIAN: G SHALE	318.9		
SILURIAN: F SHALE	325.6		
SILURIAN: F SALT			
SILURIAN: E CARBONATE	369.0		
SILURIAN: D SALT/EQUIVALENT			
SILURIAN: C SHALE	395.8		
SILURIAN: B MARKER	407.4		
SILURIAN: B EQUIVALENT			
SILURIAN: B SALT	413.7		
SILURIAN: B ANHYDRITE			
SILURIAN: A2 CARBONATE	482.3		
SILURIAN: A2 SALT			
SILURIAN: A2 ANHYDRITE	513.6		
SILURIAN: A1 CARBONATE			
SILURIAN: A1 SALT			
SILURIAN: A1 ANHYDRITE			
SILURIAN: GUELPH	517.0		
SILURIAN: ERAMOSA			
SILURIAN: GOAT ISLAND			
SILURIAN: GASPORT/WIARTON			
SILURIAN: DECEW			
SILURIAN: ROCHESTER			
SILURIAN: IRONDEQUOIT			
SILURIAN: REYNALES/FOSSIL HILL			
SILURIAN: THOROLD			
SILURIAN: GRIMSBY			
SILURIAN: CABOT HEAD			
SILURIAN: MANITOULIN			
SILURIAN: WHIRLPOOL			
ORDOVICIAN: QUEENSTON			
ORDOVICIAN: BLUE MOUNTAIN - GEORG BAY			
ORDOVICIAN: COLLINGWOOD			
ORDOVICIAN: COBOURG			
ORDOVICIAN: VERULAM			
ORDOVICIAN: KIRKFIELD			
ORDOVICIAN: COBOCONK			
ORDOVICIAN: GULL RIVER			
ORDOVICIAN: SHADOW LAKE			
CAMBRIAN			
PRECAMBRIAN			

GEOLOGY BY T.R. Carter

T.R. Carter

CTY Lambton TWP Enniskillen BLK TRAC 1 LOT 6 CON VI

WELL NAME Highridge Corey Enniskillen 1-6-VI PERMIT 7151 INIT CLASS NPW

OPERATOR Highridge Exploration Ltd TARGET SAL CUR STATUS GS-ABD

DRILLING DATA

CONTRACTOR Rawlings Drilling Company

RIG TYPE Cable

CABLE TOP	1.0	KB ELEV	199.8
BOT	688.8	LOGGER	687.6
ROTRY TOP		DRILLER	688.8
BOT		DEEP END	
DRLG FLD		PLUG BK	

DATES

PERMIT	1987-06-25
SPUD	1987-06-29
COMPTD	1987-08-01
OFFCNF	1988-08-01
WRKOVR	
ABNDND	1987-08-07

COORDINATES

NORTH		m
SOUTH	107	m
EAST		m
WEST	107	m
LAT	42 50 00	
LONG	82 11 41	

SAMPLES

TOP	22.3
BOT	688.8
TRAY	6511

INITIAL GAS RECORD

INTERVAL	FLOW	SIP
388.6 – 391.6		

CASING AND TUBING RECORD

DIAM	WEIGHT	SET AT	HOW SET	RECOV
273	60.3	23	CEM	23
203	35.7	125	CEM	125
178	29.8	358	CEM	262.5

COMPLETION DATA

GAS 10 ^{3}m^3/d

OIL m^3/d

SIP kPa

FORM

INTRVL m

m

m

INITIAL OIL RECORD

INTERVAL	FLOW	DENSITY

LOGGING RECORD

INTERVAL	TYPE	COMPANY
0.0 – 687.6	GRNL	Computalog

PERF ☐ OPEN HOLE ☐

REMARKS

Bedrock top not reported by operator
A-2 Shale at 587.7

INITIAL WATER RECORD

INTERVAL	STAT LEV	TYPE
158 –	61	SUL

CORING RECORD

INTERVAL	LOCATION	NO	ANAL

GEOLOGICAL CONTACTS

		TOP	ELEV	THICK
	KB /[illegible]	0.0		
	DRIFT /[illegible]	1.0		
DEVONIAN	PORT LAMBTON			
	KETTLE POINT	22.0		
	HAMILTON	46.7		
	MARCELLUS			
	DUNDEE	123.0		
	COLUMBUS			
	LUCAS	153.9		
	AMHERSTBURG	224.0		
	SYLVANIA			
	BOIS BLANC	277.4		
	SPRINGVALE			
	ORISKANY			
SILURIAN	BASS ISLANDS	295.7		
	G SHALE	346.0		
	F SHALE	352.5		
	F SALT			
	E CARBONATE	408.2		
	D SALT/[illegible]	434.4		
	C SHALE	446.1		
	B MARKER	466.3		
	B EQUIVALENT			
	B SALT	473.6		
	B ANHYDRITE			
	A2 CARBONATE	554.0		
	A2 SALT	596.3		
SILURIAN	A2 ANHYDRITE			
	A1 CARBONATE	624.3		
	A1 SALT			
	A1 ANHYDRITE	665.6		
	GUELPH	669.0		
	ERAMOSA			
	GOAT ISLAND	672.3		
	GASPORT/WIARTON	679.0		
	DECEW			
	ROCHESTER			
	IRONDEQUOIT			
	REYNALES/FOSSIL HILL			
	THOROLD			
	GRIMSBY			
	CABOT HEAD			
	MANITOULIN			
	WHIRLPOOL			
ORDOVICIAN	QUEENSTON			
	BLUE MOUNTAIN - GEORG BAY			
	COLLINGWOOD			
	COBOURG			
	VERULAM			
	KIRKFIELD			
	COBOCONK			
	GULL RIVER			
	SHADOW LAKE			
CAMBRIAN				
PRECAMBRIAN				

GEOLOGY BY T.R. Carter

CTY Lambton TWP Enniskillen BLK TRAC 8 LOT 10 CON I

WELL NAME Highridge Raen, Enniskillen 8-10-I PERMIT 7114 INIT CLASS NPW

OPERATOR Raen Petroleum Corporation TARGET SAL CUR STATUS GS-ABD

DRILLING DATA

CONTRACTOR Newport Drilling Ltd

RIG TYPE Cable

CABLE TOP	1.2	KB ELEV	199.7
BOT	623.0	LOGGER	622.2
ROTRY TOP		DRILLER	623.0
BOT		DEEP END	
DRLG FLD		PLUG BK	

DATES

PERMIT	1987-03-09
SPUD	1987-03-17
COMPTD	1987-04-22
OFFCNF	1988-04-22
WRKOVR	
ABNDND	1987-04-29

COORDINATES

NORTH	106.7	m
SOUTH		m
EAST		m
WEST	271.3	m
LAT	42 45 42	
LONG	82-10-07	

SAMPLES

TOP	18
BOT	623
TRAY	9680

INITIAL GAS RECORD

INTERVAL	FLOW	SIP
601 –	0.28	
609 – 613	0.33	782

CASING AND TUBING RECORD

DIAM	WEIGHT	SET AT	HOW SET	RECOV
273	59.5	18.3	SHO	18.3
219	47.6	133.1	SHO	133.1
178	29.8	346.1	CEM	218.5
140	20.8	598.9	CEM	433.2

COMPLETION DATA

GAS 10 ^{3}m^3/d

OIL m^3/d

SIP kPa

FORM

INTRVL m

m

m

INITIAL OIL RECORD

INTERVAL	FLOW	DENSITY

LOGGING RECORD

INTERVAL	TYPE	COMPANY
0 – 622.0	GRNL	Computalog

PERF ☐ OPEN HOLE ☐

REMARKS

A-2 Shale at 539.5

INITIAL WATER RECORD

INTERVAL	STAT LEV	TYPE
17 –		FRE
119 –	60	SUL

CORING RECORD

INTERVAL	LOCATION	NO	ANAL

GEOLOGICAL CONTACTS

		TOP	ELEV	THICK
	KB /[illegible]	0.0		
	DRIFT /[illegible]	1.2		
DEVONIAN	PORT LAMBTON			
	KETTLE POINT	18.0		
	HAMILTON	36.5		
	MARCELLUS			
	DUNDEE	112.0		
	COLUMBUS			
	LUCAS			
	AMHERSTBURG	206.0		
	SYLVANIA			
	BOIS BLANC	234.0		
	SPRINGVALE			
	ORISKANY			
SILURIAN	BASS ISLANDS	282.0		
	G SHALE	331.3		
	F SHALE	337.7		
	F SALT			
	E CARBONATE	381.8		
	D SALT/EQUIVALENT			
	C SHALE	408.2		
	B MARKER	422.4		
	B EQUIVALENT			
	B SALT	428.7		
	B ANHYDRITE			
	A2 CARBONATE	506.5		
	A2 SALT	548.0		
SILURIAN	A2 ANHYDRITE			
	A1 CARBONATE	565.0		
	A1 SALT			
	A1 ANHYDRITE	597.0		
	GUELPH	600.0		
	ERAMOSA			
	GOAT ISLAND	613.0		
	GASPORT/WIARTON			
	DECEW			
	ROCHESTER			
	IRONDEQUOIT			
	REYNALES/FOSSIL HILL			
	THOROLD			
	GRIMSBY			
	CABOT HEAD			
	MANITOULIN			
	WHIRLPOOL			
ORDOVICIAN	QUEENSTON			
	BLUE MOUNTAIN - GEORG BAY			
	COLLINGWOOD			
	COBOURG			
	VERULAM			
	KIRKFIELD			
	COBOCONK			
	GULL RIVER			
	SHADOW LAKE			
CAMBRIAN				
PRECAMBRIAN				

GEOLOGY BY T.R. Carter

CTY Lambton TWP Enniskillen BLK TRAC 2-7 LOT 13 CON I

WELL NAME P-R & LEO 85 #2 Enniskillen 13-I PERMIT 7144 INIT CLASS NPW

OPERATOR P-R & LEO 85 TARGET DEV CUR STATUS OS-ABD

DRILLING DATA

CONTRACTOR James Newport Drilling Ltd
RIG TYPE Cable
CABLE TOP 0.5 KB ELEV 200.8
BOT 135.3 LOGGER
ROTRY TOP DRILLER 135.3
BOT DEEP END
DRLG FLD PLUG BK

DATES

PERMIT 1987-05-27
SPUD 1987-06-29
COMPTD 1987-07-30
OFFCNF 1988-07-30
WRKOVR
ABNDND 1987-08-03

COORDINATES

NORTH 261.0 m
SOUTH m
EAST 145.8 m
WEST m
LAT 42 45 46
LONG 82 08 54

SAMPLES

TOP 21.3
BOT 135.3
TRAY 8112

INITIAL GAS RECORD

INTERVAL	FLOW	SIP
30 –		

CASING AND TUBING RECORD

DIAM	WEIGHT	SET AT	HOW SET	RECOV
219	35.7	21.3	SHO	21.3
178	29.8	43.0	SHO	43.0

COMPLETION DATA

GAS $10^3m^3/d$
OIL m^3/d
SIP kPa
FORM
INTRVL m
m
PERF ☐ OPEN HOLE ☐

INITIAL OIL RECORD

INTERVAL	FLOW	DENSITY
100.6 –		

LOGGING RECORD

INTERVAL	TYPE	COMPANY

REMARKS

INITIAL WATER RECORD

INTERVAL	STAT LEV	TYPE
28.0 – 30	9.1	FRE
134.1 –	122	SUL

CORING RECORD

INTERVAL	LOCATION	NO	mm

GEOLOGICAL CONTACTS

		TOP	ELEV	THICK
	KB ~~LAKE LEVEL~~	0.0		
	DRIFT ~~LAKE BOTTOM~~	0.5		
DEVONIAN	PORT LAMBTON			
	KETTLE POINT	21.3		
	HAMILTON	25.0		
	MARCELLUS			
	DUNDEE	100.3		
	COLUMBUS			
	LUCAS	126.8		
	AMHERSTBURG			
	SYLVANIA			
	BOIS BLANC			
	SPRINGVALE			
	ORISKANY			
SILURIAN	BASS ISLANDS			
	G SHALE			
	F SHALE			
	F SALT			
	E CARBONATE			
	D SALT/EQUIVALENT			
	C SHALE			
	B MARKER			
	B EQUIVALENT			
	B SALT			
	B ANHYDRITE			
	A2 CARBONATE			
	A2 SALT			
SILURIAN	A2 ANHYDRITE			
	A1 CARBONATE			
	A1 SALT			
	A1 ANHYDRITE			
	GUELPH			
	ERAMOSA			
	GOAT ISLAND			
	GASPORT/WIARTON			
	DECEW			
	ROCHESTER			
	IRONDEQUOIT			
	REYNALES/FOSSIL HILL			
	THOROLD			
	GRIMSBY			
	CABOT HEAD			
	MANITOULIN			
	WHIRLPOOL			
ORDOVICIAN	QUEENSTON			
	BLUE MOUNTAIN - GEORG BAY			
	COLLINGWOOD			
	COBOURG			
	VERULAM			
	KIRKFIELD			
	COBOCONK			
	GULL RIVER			
	SHADOW LAKE			
	CAMBRIAN			
	PRECAMBRIAN			

GEOLOGY BY T.R. Carter

CTY Lambton TWP Enniskillen BLK TRAC 5 LOT 14 CON VIII

WELL NAME Philon Energy Enniskillen 5-14-VIII PERMIT 7193 INIT CLASS NPW

OPERATOR Philon Energy Inc. TARGET SAL CUR STATUS OS-ABD

DRILLING DATA

CONTRACTOR James Newport Drilling Ltd
RIG TYPE Cable
CABLE TOP 1.2 KB ELEV 202.5
BOT 664.0 LOGGER 663.5
ROTRY TOP DRILLER 664.0
BOT DEEP END
DRLG FLD PLUG BK

DATES

PERMIT 1987-10-21
SPUD 1987-10-29
COMPTD 1987-12-01
OFFCNF 1988-12-01
WRKOVR
ABNDND 1987-12-04

COORDINATES

NORTH m
SOUTH 815.9 m
EAST m
WEST 245.5 m
LAT 42 50 59
LONG 82 08 09

SAMPLES

TOP 18
BOT 664
TRAY 9198

INITIAL GAS RECORD

INTERVAL	FLOW	SIP

CASING AND TUBING RECORD

DIAM	WEIGHT	SET AT	HOW SET	RECOV
273	60.3	18.4	SHO	18.4
219	35.7	110.5	SHO	110.5
178	29.8	339.6	CEM	224.7

COMPLETION DATA

GAS $10^3m^3/d$
OIL m^3/d
SIP kPa
FORM
INTRVL m
m
PERF ☐ OPEN HOLE ☐

INITIAL OIL RECORD

INTERVAL	FLOW	DENSITY
656 – 657		

LOGGING RECORD

INTERVAL	TYPE	COMPANY
0.0 – 662.5	GRNL	Computalog
540.0 – 663.5	DENL	"

REMARKS

A-2 Shale at 579.0

INITIAL WATER RECORD

INTERVAL	STAT LEV	TYPE
149 – 152		SUL

CORING RECORD

INTERVAL	LOCATION	NO	mm

GEOLOGICAL CONTACTS

		TOP	ELEV	THICK
	KB ~~KIRKFIELD~~	0.0		
	DRIFT ~~KIRKFIELD~~	1.2		
DEVONIAN	PORT LAMBTON			
	KETTLE POINT	18.0		
	HAMILTON	34.0		
	MARCELLUS			
	DUNDEE	110.5		
	COLUMBUS			
	LUCAS	139.0		
	AMHERSTBURG	208.0		
	SYLVANIA			
	BOIS BLANC	260.0		
	SPRINGVALE			
	ORISKANY			
SILURIAN	BASS ISLANDS	290.0		
	G SHALE	335.0		
	F SHALE	343.2		
	F SALT	384.6		
	E CARBONATE	398.3		
	D SALT~~/EQUIVALENT~~	425.0		
	C SHALE	436.1		
	B MARKER	457.2		
	B EQUIVALENT			
	B SALT	465.0		
	B ANHYDRITE	544.0		
	A2 CARBONATE	545.5		
	A2 SALT	587.6		
SILURIAN	A2 ANHYDRITE	607.0		
	A1 CARBONATE	610.3		
	A1 SALT			
	A1 ANHYDRITE	649.0		
	GUELPH	654.0		
	ERAMOSA			
	GOAT ISLAND	658.2		
	GASPORT/WIARTON			
	DECEW			
	ROCHESTER			
	IRONDEQUOIT			
	REYNALES/FOSSIL HILL			
	THOROLD			
	GRIMSBY			
	CABOT HEAD			
	MANITOULIN			
	WHIRLPOOL			
ORDOVICIAN	QUEENSTON			
	BLUE MOUNTAIN - GEORG BAY			
	COLLINGWOOD			
	COBOURG			
	VERULAM			
	KIRKFIELD			
	COBOCONK			
	GULL RIVER			
	SHADOW LAKE			
	CAMBRIAN			
	PRECAMBRIAN			

GEOLOGY BY T.R. Carter

T.R. Carter

CTY: Lambton TWP: Enniskillen BLK: TRAC: 3 LOT: 14 CON: IX

WELL NAME: Bender 17A Disposal Enniskillen 3-14-IX PERMIT: 6993A INIT CLASS: BD

OPERATOR: Harold Bender TARGET: DEV CUR STATUS: BD-ABD

DRILLING DATA

CONTRACTOR: Harold Bender
RIG TYPE: Cable
CABLE TOP: 0.0
BOT: 184.4
ROTRY TOP:
BOT:
DRLG FLD:

DEPTHS
KB ELEV: 201.1
LOGGER:
DRILLER: 184.4
DEEP END:
PLUG BK: 147.8

DATES

PERMIT: 1986-02-27
SPUD: 1986-10-15
COMPTD: 1987-01-03
OFFCNF: 1987-02-02
WRKOVR:
ABNDND: 1987-11-00

COORDINATES

NORTH: m
SOUTH: 332.0 m
EAST: 144.8 m
WEST: m
LAT: 42 52 00
LONG: 82 08 15

SAMPLES

TOP: 24.2
BOT: 182.9
TRAY: 5639

INITIAL GAS RECORD

INTERVAL	FLOW	SIP
–		
–		
–		
–		
–		
–		

CASING AND TUBING RECORD

DIAM	WEIGHT	SET AT	HOW SET	RECOV
219		33.5	SHO	0
178		79.0	SHO	79.0
114		146.3	HAN	146.3

COMPLETION DATA

GAS: 10³m³/d
OIL: m³/d
SIP: kPa
FORM:
INTRVL: m
m
m

INITIAL OIL RECORD

INTERVAL	FLOW	DENSITY
30.4 –	SHOW	
136 – 138	SHOW	
140 – 142	SHOW	
–		
–		
–		

LOGGING RECORD

INTERVAL	TYPE	COMPANY
–		
–		
–		
–		
–		
–		

PERF ☐ OPEN HOLE ☐

REMARKS: Offset to a lost hole

INITIAL WATER RECORD

INTERVAL	STAT LEV	TYPE
30.4 –	12	FRE
103.6 –	27	SUL
–		
–		
–		
–		

CORING RECORD

INTERVAL	LOCATION	NO	mm
–			
–			
–			
–			
–			

GEOLOGICAL CONTACTS	TOP	ELEV	THICK
KB / [illegible]	0.0		
DRIFT / [illegible]	0.0		
DEVONIAN: PORT LAMBTON			
DEVONIAN: KETTLE POINT			
DEVONIAN: HAMILTON	25.9		
DEVONIAN: MARCELLUS			
DEVONIAN: DUNDEE	97.5		
DEVONIAN: COLUMBUS			
DEVONIAN: LUCAS	127.5		
DEVONIAN: AMHERSTBURG			
DEVONIAN: SYLVANIA			
DEVONIAN: BOIS BLANC			
DEVONIAN: SPRINGVALE			
DEVONIAN: ORISKANY			
SILURIAN: BASS ISLANDS			
SILURIAN: G SHALE			
SILURIAN: F SHALE			
SILURIAN: F SALT			
SILURIAN: E CARBONATE			
SILURIAN: D SALT/EQUIVALENT			
SILURIAN: C SHALE			
SILURIAN: B MARKER			
SILURIAN: B EQUIVALENT			
SILURIAN: B SALT			
SILURIAN: B ANHYDRITE			
SILURIAN: A2 CARBONATE			
SILURIAN: A2 SALT			
SILURIAN: A2 ANHYDRITE			
SILURIAN: A1 CARBONATE			
SILURIAN: A1 SALT			
SILURIAN: A1 ANHYDRITE			
SILURIAN: GUELPH			
SILURIAN: ERAMOSA			
SILURIAN: GOAT ISLAND			
SILURIAN: GASPORT/WIARTON			
SILURIAN: DECEW			
SILURIAN: ROCHESTER			
SILURIAN: IRONDEQUOIT			
SILURIAN: REYNALES/FOSSIL HILL			
SILURIAN: THOROLD			
SILURIAN: GRIMSBY			
SILURIAN: CABOT HEAD			
SILURIAN: MANITOULIN			
SILURIAN: WHIRLPOOL			
ORDOVICIAN: QUEENSTON			
ORDOVICIAN: BLUE MOUNTAIN - GEORG BAY			
ORDOVICIAN: COLLINGWOOD			
ORDOVICIAN: COBOURG			
ORDOVICIAN: VERULAM			
ORDOVICIAN: KIRKFIELD			
ORDOVICIAN: COBOCONK			
ORDOVICIAN: GULL RIVER			
ORDOVICIAN: SHADOW LAKE			
CAMBRIAN			
PRECAMBRIAN			

GEOLOGY BY: T.R. Carter

CTY: Lambton TWP: Moore BLK: TRAC: 5 LOT: 4 CON: VII

WELL NAME: Bowrio et al Moore 5-4 VII PERMIT: 7196 INIT CLASS: NPW

OPERATOR: Bowrio Resources Ltd TARGET: SAL CUR STATUS: GSOS-ABD

DRILLING DATA

CONTRACTOR: James Newport Drilling Ltd
RIG TYPE: Cable
CABLE TOP: 1.3
BOT: 593.1
ROTRY TOP:
BOT:
DRLG FLD:

DEPTHS
KB ELEV: 195.1
LOGGER: 592.2
DRILLER: 593.1
DEEP END:
PLUG BK:

DATES

PERMIT: 1987-11-04
SPUD: 1987-11-10
COMPTD: 1987-12-15
OFFCNF: 1988-12-15
WRKOVR:
ABNDND: 1987-12-17

COORDINATES

NORTH: 446.2 m
SOUTH: m
EAST: m
WEST: 109.7 m
LAT: 42 50 24
LONG: 82 15 42

SAMPLES

TOP: 35
BOT: 593
TRAY: 9248

INITIAL GAS RECORD

INTERVAL	FLOW	SIP
569 – 570	1.615	
–		
–		
–		
–		
–		

CASING AND TUBING RECORD

DIAM	WEIGHT	SET AT	HOW SET	RECOV
273	60.3	36.6	SHO	36.6
219	35.7	132.8	SHO	131.2
178	29.8	375.5	CEM	288.3

COMPLETION DATA

GAS: 10³m³/d
OIL: m³/d
SIP: kPa
FORM:
INTRVL: m
m
m

INITIAL OIL RECORD

INTERVAL	FLOW	DENSITY
570 – 572		
133 – 138		
–		
–		
–		
–		

LOGGING RECORD

INTERVAL	TYPE	COMPANY
0.0 – 592.2	GRNL	Computalog
525.0 – 592.2	DENL	"
–		
–		
–		
–		

PERF ☐ OPEN HOLE ☐

REMARKS: A-2 Shale at 563.0
Pinnacle reef

INITIAL WATER RECORD

INTERVAL	STAT LEV	TYPE
35 –		FRE
138 –	55	SUL
577 –	365	SAL
–		
–		
–		

CORING RECORD

INTERVAL	LOCATION	NO	mm
–			
–			
–			
–			
–			

GEOLOGICAL CONTACTS	TOP	ELEV	THICK
KB / [illegible]	0.0		
DRIFT / [illegible]	1.3		
DEVONIAN: PORT LAMBTON			
DEVONIAN: KETTLE POINT	35.8		
DEVONIAN: HAMILTON	51.2		
DEVONIAN: MARCELLUS			
DEVONIAN: DUNDEE	131.7		
DEVONIAN: COLUMBUS			
DEVONIAN: LUCAS	163.0		
DEVONIAN: AMHERSTBURG	224.0		
DEVONIAN: SYLVANIA			
DEVONIAN: BOIS BLANC	286.0		
DEVONIAN: SPRINGVALE			
DEVONIAN: ORISKANY			
SILURIAN: BASS ISLANDS	308.5		
SILURIAN: G SHALE	356.1		
SILURIAN: F SHALE	362.3		
SILURIAN: F SALT	403.6		
SILURIAN: E CARBONATE	418.0		
SILURIAN: D SALT/[illegible]	441.0		
SILURIAN: C SHALE	451.0		
SILURIAN: B MARKER	475.8		
SILURIAN: B EQUIVALENT	484.0		
SILURIAN: B SALT	486.6		
SILURIAN: B ANHYDRITE			
SILURIAN: A2 CARBONATE	538.8		
SILURIAN: A2 SALT			
SILURIAN: A2 ANHYDRITE	567.0		
SILURIAN: A1 CARBONATE			
SILURIAN: A1 SALT			
SILURIAN: A1 ANHYDRITE			
SILURIAN: GUELPH	568.5		
SILURIAN: ERAMOSA			
SILURIAN: GOAT ISLAND			
SILURIAN: GASPORT/WIARTON			
SILURIAN: DECEW			
SILURIAN: ROCHESTER			
SILURIAN: IRONDEQUOIT			
SILURIAN: REYNALES/FOSSIL HILL			
SILURIAN: THOROLD			
SILURIAN: GRIMSBY			
SILURIAN: CABOT HEAD			
SILURIAN: MANITOULIN			
SILURIAN: WHIRLPOOL			
ORDOVICIAN: QUEENSTON			
ORDOVICIAN: BLUE MOUNTAIN - GEORG BAY			
ORDOVICIAN: COLLINGWOOD			
ORDOVICIAN: COBOURG			
ORDOVICIAN: VERULAM			
ORDOVICIAN: KIRKFIELD			
ORDOVICIAN: COBOCONK			
ORDOVICIAN: GULL RIVER			
ORDOVICIAN: SHADOW LAKE			
CAMBRIAN			
PRECAMBRIAN			

GEOLOGY BY: T.R. Carter

CTY: Lambton TWP: Moore BLK: TRAC: LOT: 9 CON: II

WELL NAME: Union Waubuno No. 1 Moore 9-II PERMIT: 7058 INIT CLASS: NGS

OPERATOR: Union Gas Ltd TARGET: SAL CUR STATUS: NGS

DRILLING DATA

CONTRACTOR: Newport Drilling Ltd

RIG TYPE: Cable DEPTHS

CABLE TOP: 1.3 KB ELEV: 191.0

BOT: 624.0 LOGGER: 620.0

ROTRY TOP: DRILLER: 624.0

BOT: DEEP END:

DRLG FLD: PLUG BK:

DATES

PERMIT: 1986-10-29

SPUD: 1987-01-05

COMPTD: 1987-03-04

OFFCNF: 1987-04-03

WRKOVR:

ABNDND:

COORDINATES

NORTH: m

SOUTH: 274.3 m

EAST: 45.7 m

WEST: m

LAT: 42 47 05.5

LONG: 82 18 25

SAMPLES

TOP: 37

BOT: 624

TRAY: 9201-9202

INITIAL GAS RECORD

INTERVAL	FLOW	SIP
556 – 624		4100
–		
–		
–		
–		
–		

CASING AND TUBING RECORD

DIAM	WEIGHT	SET AT	HOW SET	RECOV
340	71.4	37.3	SHO	0
273	60.3	158.8	SHO	158.8
219	35.7	385.9	CEM	0
178	34.2	549.7	CEM	0

COMPLETION DATA

GAS: $10^3 m^3/d$

OIL: m^3/d

SIP: kPa

FORM: Guelph

INTRVL: 556-624 m

m

m

INITIAL OIL RECORD

INTERVAL	FLOW	DENSITY
–		
–		
–		
–		
–		

LOGGING RECORD

INTERVAL	TYPE	COMPANY
0 – 620.0	GRNL	Computalog
540 – 619.5	DENL	"
0 – 533.0	CBND	"
–		
–		
–		
–		

PERF ☐ OPEN HOLE ☐

REMARKS

A-2 Shale at 547.0

20% qtz sand 198-200

INITIAL WATER RECORD

INTERVAL	STAT LEV	TYPE
35 –		FRE
192 –	62	SUL
–		
–		
–		
–		

CORING RECORD

INTERVAL	LOCATION	NO	mm
–			
–			
–			
–			
–			

GEOLOGICAL CONTACTS	TOP	ELEV	THICK
KB	0.0		
DRIFT	1.3		
PORT LAMBTON			
KETTLE POINT	36.0		
HAMILTON	80.0		
MARCELLUS			
DUNDEE	157.7		
COLUMBUS			
LUCAS	200.0		
AMHERSTBURG	269.0		
SYLVANIA			
BOIS BLANC	317.0		
SPRINGVALE			
ORISKANY			
BASS ISLANDS	338.0		
G SHALE	379.1		
F SHALE	385.1		
F SALT			
E CARBONATE	428.0		
D SALT/EQUIVALENT			
C SHALE	455.6		
B MARKER	466.3		
B EQUIVALENT			
B SALT	473.1		
B ANHYDRITE			
A2 CARBONATE	522.5		
A2 SALT			
A2 ANHYDRITE	551.2		
A1 CARBONATE			
A1 SALT			
A1 ANHYDRITE			
GUELPH	555.5		
ERAMOSA			
GOAT ISLAND			
GASPORT/WIARTON			
DECEW			
ROCHESTER			
IRONDEQUOIT			
REYNALES/FOSSIL HILL			
THOROLD			
GRIMSBY			
CABOT HEAD			
MANITOULIN			
WHIRLPOOL			
QUEENSTON			
BLUE MOUNTAIN - GEORG. BAY			
COLLINGWOOD			
COBOURG			
VERULAM			
KIRKFIELD			
COBOCONK			
GULL RIVER			
SHADOW LAKE			
CAMBRIAN			
PRECAMBRIAN			

GEOLOGY BY T.R. Carter

CTY: Lambton TWP: Moore BLK: TRAC: LOT: 10 CON: II

WELL NAME: Union Waubuno No. 2 Moore 10-II PERMIT: 7059 INIT CLASS: NGS

OPERATOR: Union Gas Ltd TARGET: SAL CUR STATUS: NGS

DRILLING DATA

CONTRACTOR: Newport Drilling Ltd

RIG TYPE: Cable DEPTHS

CABLE TOP: 1.3 KB ELEV: 190.6

BOT: 624.5 LOGGER: 624.5

ROTRY TOP: DRILLER: 624.5

BOT: DEEP END:

DRLG FLD: PLUG BK:

DATES

PERMIT: 1986-10-29

SPUD: 1987-01-12

COMPTD: 1987-03-10

OFFCNF: 1987-04-09

WRKOVR:

ABNDND:

COORDINATES

NORTH: m

SOUTH: 441.9 m

EAST: m

WEST: 30.5 m

LAT: 42 47 00

LONG: 82 18 28

SAMPLES

TOP: 38

BOT: 624

TRAY: 9189-9190

INITIAL GAS RECORD

INTERVAL	FLOW	SIP
552 – 624.5		
–		
–		
–		
–		
–		

CASING AND TUBING RECORD

DIAM	WEIGHT	SET AT	HOW SET	RECOV
340	71.4	38.4	SHO	0
273	60.3	161.7	SHO	161.7
219	35.7	383.8	CEM	0
178	34.2	547.9	CEM	0

COMPLETION DATA

GAS: $10^3 m^3/d$

OIL: m^3/d

SIP: kPa

FORM: Guelph

INTRVL: 552-624.5 m

m

m

INITIAL OIL RECORD

INTERVAL	FLOW	DENSITY
–		
–		
–		
–		
–		

LOGGING RECORD

INTERVAL	TYPE	COMPANY
0 – 531.0	CBND	Computalog
0 – 624.5	GRNL	"
540 – 624.5	DENL	"
–		
–		
–		
–		

PERF ☐ OPEN HOLE ☐

REMARKS

A-2 Shale at 544.7

25% quartz sand from 200 to 204m

INITIAL WATER RECORD

INTERVAL	STAT LEV	TYPE
35 –		FRE
194 –	60	SUL
–		
–		
–		
–		

CORING RECORD

INTERVAL	LOCATION	NO	mm
0 – 531.0			
0 – 624.5			
540 – 624.5			
–			
–			

GEOLOGICAL CONTACTS	TOP	ELEV	THICK
KB	0.0		
DRIFT	1.3		
PORT LAMBTON			
KETTLE POINT	30.0		
HAMILTON	83.0		
MARCELLUS			
DUNDEE	160.0		
COLUMBUS			
LUCAS	204.0		
AMHERSTBURG	268.0		
SYLVANIA			
BOIS BLANC	318.0		
SPRINGVALE			
ORISKANY			
BASS ISLANDS	335.0		
G SHALE	380.0		
F SHALE	387.0		
F SALT			
E CARBONATE	429.0		
D SALT/EQUIVALENT			
C SHALE	454.9		
B MARKER	465.5		
B EQUIVALENT	471.0		
B SALT	481.3		
B ANHYDRITE			
A2 CARBONATE	523.2		
A2 SALT			
A2 ANHYDRITE	548.0		
A1 CARBONATE			
A1 SALT			
A1 ANHYDRITE			
GUELPH	551.4		
ERAMOSA			
GOAT ISLAND			
GASPORT/WIARTON			
DECEW			
ROCHESTER			
IRONDEQUOIT			
REYNALES/FOSSIL HILL			
THOROLD			
GRIMSBY			
CABOT HEAD			
MANITOULIN			
WHIRLPOOL			
QUEENSTON			
BLUE MOUNTAIN - GEORG. BAY			
COLLINGWOOD			
COBOURG			
VERULAM			
KIRKFIELD			
COBOCONK			
GULL RIVER			
SHADOW LAKE			
CAMBRIAN			
PRECAMBRIAN			

GEOLOGY BY T.R. Carter

T.R. Carter

CTY: Lambton TWP: Moore BLK: TRAC: 6 LOT: 12 CON: XII

WELL NAME: Penway et al Moore 6-12-XII PERMIT: 7169 INIT CLASS: NPW

OPERATOR: Penway Explorers Ltd TARGET: SAL CUR STATUS: DH-ABD

DRILLING DATA				DATES		COORDINATES			SAMPLES	
CONTRACTOR	Charles Shaw Drilling Ltd			PERMIT	1987-08-04	NORTH	533.4	m	TOP	42
RIG TYPE	Cable	DEPTHS		SPUD	1987-08-06	SOUTH		m	BOT	784
CABLE TOP	1.2	KB ELEV	199.6	COMPTD	1987-09-24	EAST	46.3	m	TRAY	9163-9184
BOT	784.0	LOGGER		OFFCNF	1988-09-24	WEST		m		
ROTRY TOP		DRILLER	784.0	WRKOVR		LAT	43 54 11			
BOT		DEEP END		ABNDND	1987-09-28	LONG	82 19 28			
DRLG FLD		PLUG BK								

INITIAL GAS RECORD

INTERVAL	FLOW	SIP
–		
–		
–		
–		
–		
–		

CASING AND TUBING RECORD

DIAM	WEIGHT	SET AT	HOW SET	RECOV
273	60.0	42.6	SHO	42.6
219	35.7	145.0	SHO	145.0
178	29.8	377.7	CEM	308.7

COMPLETION DATA

GAS $10^3m^3/d$

OIL m^3/d

SIP kPa

FORM

INTRVL m

m

m

INITIAL OIL RECORD

INTERVAL	FLOW	DENSITY
–		
–		
–		
–		
–		
–		

LOGGING RECORD

INTERVAL	TYPE	COMPANY
–		
–		
–		
–		
–		
–		

PERF ☐ OPEN HOLE ☐

REMARKS

Native sulfur at 217

Anhydrite 697.5 to 703.0

INITIAL WATER RECORD

INTERVAL	STAT LEV	TYPE
42 –	6	FRE
149 –	65	SUL
–		
–		
–		
–		

CORING RECORD

INTERVAL	LOCATION	NO	mm
–			
–			
–			
–			
–			

GEOLOGICAL CONTACTS	TOP	ELEV	THICK
KB /LAKE KEVEL	0.0		
DRIFT /LAKE BOTTOM	1.2		
DEVONIAN: PORT LAMBTON			
DEVONIAN: KETTLE POINT	42.0		
DEVONIAN: HAMILTON	57.5		
DEVONIAN: MARCELLUS			
DEVONIAN: DUNDEE	142.5		
DEVONIAN: COLUMBUS			
DEVONIAN: LUCAS	173.0		
DEVONIAN: AMHERSTBURG	265.0		
DEVONIAN: SYLVANIA			
DEVONIAN: BOIS BLANC	310.0		
DEVONIAN: SPRINGVALE			
DEVONIAN: ORISKANY			
SILURIAN: BASS ISLANDS	329.0		
SILURIAN: G SHALE	368.0		
SILURIAN: F SHALE	373.0		
SILURIAN: F SALT	417.0		
SILURIAN: E CARBONATE	507.0		
SILURIAN: D SALT/EQUIVALENT	526.0		
SILURIAN: C SHALE	540.0		
SILURIAN: B MARKER	559.0		
SILURIAN: B EQUIVALENT			
SILURIAN: B SALT	565.0		
SILURIAN: B ANHYDRITE			
SILURIAN: A2 CARBONATE	653.0		
SILURIAN: A2 SALT	703.0		
SILURIAN: A2 ANHYDRITE			
SILURIAN: A1 CARBONATE	728.0		
SILURIAN: A1 SALT			
SILURIAN: A1 ANHYDRITE	769.3		
SILURIAN: GUELPH	770.5		
SILURIAN: ERAMOSA			
SILURIAN: GOAT ISLAND	778.0		
SILURIAN: GASPORT/WARTON			
SILURIAN: DECEW			
SILURIAN: ROCHESTER			
SILURIAN: IRONDEQUOIT			
SILURIAN: REYNALES/FOSSIL HILL			
SILURIAN: THOROLD			
SILURIAN: GRIMSBY			
SILURIAN: CABOT HEAD			
SILURIAN: MANITOULIN			
SILURIAN: WHIRLPOOL			
ORDOVICIAN: QUEENSTON			
ORDOVICIAN: BLUE MOUNTAIN - GEORG BAY			
ORDOVICIAN: COLLINGWOOD			
ORDOVICIAN: COBOURG			
ORDOVICIAN: VERULAM			
ORDOVICIAN: KIRKFIELD			
ORDOVICIAN: COBOCONK			
ORDOVICIAN: GULL RIVER			
ORDOVICIAN: SHADOW LAKE			
CAMBRIAN			
PRECAMBRIAN			

GEOLOGY BY T.R. Carter

CTY: Lambton TWP: Moore BLK: TRAC: 4-8 LOT: 22 CON: VII

WELL NAME: Bryant-Union Moore 4-8-22-VII PERMIT: 7198 INIT CLASS: DEV

OPERATOR: R.G. Bryant Energy Associates Inc. TARGET: DEV CUR STATUS: OPGS

DRILLING DATA				DATES		COORDINATES			SAMPLES	
CONTRACTOR	Eagle Drilling Services Inc.			PERMIT	1987-11-09	NORTH	66.8	m	TOP	39.6
RIG TYPE	Rotary	DEPTHS		SPUD	1987-12-01	SOUTH		m	BOT	157.0
CABLE TOP		KB ELEV	194.6	COMPTD	1987-12-04	EAST		m	TRAY	7938
BOT		LOGGER		OFFCNF	1988-01-03	WEST	65.6	m		
ROTRY TOP	1.6	DRILLER	157.0	WRKOVR		LAT	42 50 20			
BOT	157.0	DEEP END		ABNDND		LONG	82 23 44			
DRLG FLD		PLUG BK								

INITIAL GAS RECORD

INTERVAL	FLOW	SIP
155.4 – 157.0		
–		
–		
–		
–		
–		

CASING AND TUBING RECORD

DIAM	WEIGHT	SET AT	HOW SET	RECOV
178	25.3	51.2	CEM	0
114	14.1	152.4	PAC	0
60	7.0	150.9	HAN	0

COMPLETION DATA

GAS $10^3m^3/d$

OIL m^3/d

SIP kPa

FORM Dundee

INTRVL m

m

m

INITIAL OIL RECORD

INTERVAL	FLOW	DENSITY
155.4 – 157.0		
–		
–		
–		
–		
–		

LOGGING RECORD

INTERVAL	TYPE	COMPANY
–		
–		
–		
–		
–		
–		

PERF ☐ OPEN HOLE ☐

REMARKS

INITIAL WATER RECORD

INTERVAL	STAT LEV	TYPE
–		
–		
–		
–		
–		
–		

CORING RECORD

INTERVAL	LOCATION	NO	mm
–			
–			
–			
–			
–			

GEOLOGICAL CONTACTS	TOP	ELEV	THICK
KB /LAKE KEVEL	0.0		
DRIFT /LAKE BOTTOM	1.6		
DEVONIAN: PORT LAMBTON			
DEVONIAN: KETTLE POINT	39.6		
DEVONIAN: HAMILTON	73.2		
DEVONIAN: MARCELLUS			
DEVONIAN: DUNDEE	152.1		
DEVONIAN: COLUMBUS			
DEVONIAN: LUCAS			
DEVONIAN: AMHERSTBURG			
DEVONIAN: SYLVANIA			
DEVONIAN: BOIS BLANC			
DEVONIAN: SPRINGVALE			
DEVONIAN: ORISKANY			
SILURIAN: BASS ISLANDS			
SILURIAN: G SHALE			
SILURIAN: F SHALE			
SILURIAN: F SALT			
SILURIAN: E CARBONATE			
SILURIAN: D SALT/EQUIVALENT			
SILURIAN: C SHALE			
SILURIAN: B MARKER			
SILURIAN: B EQUIVALENT			
SILURIAN: B SALT			
SILURIAN: B ANHYDRITE			
SILURIAN: A2 CARBONATE			
SILURIAN: A2 SALT			
SILURIAN: A2 ANHYDRITE			
SILURIAN: A1 CARBONATE			
SILURIAN: A1 SALT			
SILURIAN: A1 ANHYDRITE			
SILURIAN: GUELPH			
SILURIAN: ERAMOSA			
SILURIAN: GOAT ISLAND			
SILURIAN: GASPORT/WARTON			
SILURIAN: DECEW			
SILURIAN: ROCHESTER			
SILURIAN: IRONDEQUOIT			
SILURIAN: REYNALES/FOSSIL HILL			
SILURIAN: THOROLD			
SILURIAN: GRIMSBY			
SILURIAN: CABOT HEAD			
SILURIAN: MANITOULIN			
SILURIAN: WHIRLPOOL			
ORDOVICIAN: QUEENSTON			
ORDOVICIAN: BLUE MOUNTAIN - GEORG BAY			
ORDOVICIAN: COLLINGWOOD			
ORDOVICIAN: COBOURG			
ORDOVICIAN: VERULAM			
ORDOVICIAN: KIRKFIELD			
ORDOVICIAN: COBOCONK			
ORDOVICIAN: GULL RIVER			
ORDOVICIAN: SHADOW LAKE			
CAMBRIAN			
PRECAMBRIAN			

GEOLOGY BY T.R. Carter

CTY: Lambton | TWP: Moore | BLK: | TRAC: 1 | LOT: 23 | CON: IX

WELL NAME: Petrosar FB-9131 (W-6) Moore 1-23-I | PERMIT: 7141 | INIT CLASS: LPG

OPERATOR: Petrosar Limited | TARGET: SAL | CUR STATUS: LPG

DRILLING DATA

CONTRACTOR: B & S Rotary Drilling

RIG TYPE: Rotary

DEPTHS

CABLE TOP | KB ELEV: 201.1

BOT | LOGGER: 655.3

ROTRY TOP | DRILLER: 656.0

BOT | DEEP END:

DRLG FLD | PLUG BK:

DATES

PERMIT: 1987-05-01

SPUD: 1987-07-14

COMPTD: 1987-08-08

OFFCNF: 1987-09-07

WRKOVR:

ABNDND:

COORDINATES

NORTH: m

SOUTH: 54.2 m

EAST: m

WEST: 38.1 m

LAT: 42 53 16

LONG: 80 24 52

SAMPLES

TOP: 163

BOT: 656

TRAY: 7991

INITIAL GAS RECORD

INTERVAL	FLOW	SIP
–		
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–		
–		
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–		

CASING AND TUBING RECORD

DIAM	WEIGHT	SET AT	HOW SET	RECOV
508	139.9	62	CEM	0
339.7	90.8	350.9	CEM	0
273.1	60.3	585.7	CEM	0

COMPLETION DATA

GAS: $10^3 m^3/d$

OIL: m^3/d

SIP: kPa

FORM:

INTRVL: m

m

m

INITIAL OIL RECORD

INTERVAL	FLOW	DENSITY
–		
–		
–		
–		
–		
–		

LOGGING RECORD

INTERVAL	TYPE	COMPANY
34 – 349	PHOT	Dres.-Atlas
50.5 – 586	GRL	"
50.5 – 586	CALP	"
0 – 655	CBND	"
0 – 573.3	VERL	"
0 – 585.0	PWAS	"
–		

PERF ☐ OPEN HOLE ☐

REMARKS

Originally drilled to 161m in 1982, deepened to 166.6m in 1986. Deepened in 1987 to TD.

INITIAL WATER RECORD

INTERVAL	STAT LEV	TYPE
–		
–		
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–		
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CORING RECORD

INTERVAL	LOCATION	NO.	ANAL
–			
–			
–			
–			
–			
–			

GEOLOGICAL CONTACTS

		TOP	ELEV	THICK
	KB [illegible]	0.0		
	DRIFT [illegible]	3.5		
DEVONIAN	PORT LAMBTON	47.5		
	KETTLE POINT	59.5		
	HAMILTON	100.8		
	MARCELLUS			
	DUNDEE	183.1		
	COLUMBUS			
	LUCAS	214.0		
	AMHERSTBURG	300.0		
	SYLVANIA			
	BOIS BLANC	342.0		
	SPRINGVALE			
	ORISKANY			
SILURIAN	BASS ISLANDS	367.5		
	G SHALE	419.0		
	F SHALE	425.3		
	F SALT	459.0		
	E CARBONATE	503.1		
	D SALT [illegible]	528.8		
	C SHALE	539.0		
	B MARKER	556.0		
	B EQUIVALENT			
	B SALT	563.0		
	B ANHYDRITE			
	A2 CARBONATE	652.7		
	A2 SALT			
SILURIAN	A2 ANHYDRITE			
	A1 CARBONATE			
	A1 SALT			
	A1 ANHYDRITE			
	GUELPH			
	ERAMOSA			
	GOAT ISLAND			
	GASPORT/WIARTON			
	DECEW			
	ROCHESTER			
	IRONDEQUOIT			
	REYNALES/FOSSIL HILL			
	THOROLD			
	GRIMSBY			
	CABOT HEAD			
	MANITOULIN			
	WHIRLPOOL			
ORDOVICIAN	QUEENSTON			
	BLUE MOUNTAIN - GEORG. BAY			
	COLLINGWOOD			
	COBOURG			
	VERULAM			
	KIRKFIELD			
	COBOCONK			
	GULL RIVER			
	SHADOW LAKE			
CAMBRIAN				
PRECAMBRIAN				

GEOLOGY BY: T.R. Carter

CTY: Lambton | TWP: Moore | BLK: | TRAC: 6 | LOT: 23 | CON: V

WELL NAME: Ram 98 Moore 6-23-V | PERMIT: 7183 | INIT CLASS: NPW

OPERATOR: Ram Petroleums Limited | TARGET: SAL | CUR STATUS: DH-ABD

DRILLING DATA

CONTRACTOR: Eagle Drilling Services Inc.

RIG TYPE: Rotary

DEPTHS

CABLE TOP | KB ELEV: 192.8

BOT | LOGGER: 799.8

ROTRY TOP: 2.6 | DRILLER: 799.0

BOT: 799.0 | DEEP END:

DRLG FLD | PLUG BK:

DATES

PERMIT: 1987-08-28

SPUD: 1987-08-31

COMPTD: 1987-09-17

OFFCNF: 1988-09-17

WRKOVR:

ABNDND: 1987-09-19

COORDINATES

NORTH: 346.4 m

SOUTH: m

EAST: 215.4 m

WEST: m

LAT: 42 49 03

LONG: 82 24 26

SAMPLES

TOP: 67

BOT: 799

TRAY: 9358-9359

INITIAL GAS RECORD

INTERVAL	FLOW	SIP
60.5 –		
–		
–		
–		
–		
–		

CASING AND TUBING RECORD

DIAM	WEIGHT	SET AT	HOW SET	RECOV
244.5	53.6	60.5	CEM	0
178.0	29.8	696.9	CEM	444.3

COMPLETION DATA

GAS: $10^3 m^3/d$

OIL: m^3/d

SIP: kPa

FORM:

INTRVL: m

m

m

INITIAL OIL RECORD

INTERVAL	FLOW	DENSITY
60.5 –		
–		
–		
–		
–		
–		

LOGGING RECORD

INTERVAL	TYPE	COMPANY
59.0 – 799.0	GRL	SCH
59.0 – 799.0	CNFD	"
10.0 – 696.0	SONL	"
698.0 – 799.0	LATL	"
698.0 – 799.0	MSFL	"
–		
–		

PERF ☐ OPEN HOLE ☐

REMARKS

Poor samples

INITIAL WATER RECORD

INTERVAL	STAT LEV	TYPE
–		
–		
–		
–		
–		
–		

CORING RECORD

INTERVAL	LOCATION	NO.	ANAL
–			
–			
–			
–			
–			
–			

GEOLOGICAL CONTACTS

		TOP	ELEV	THICK
	KB [illegible]	0.0		
	DRIFT [illegible]	2.6		
DEVONIAN	PORT LAMBTON	47.5		
	KETTLE POINT	72.2		
	HAMILTON	145.6		
	MARCELLUS			
	DUNDEE	221.0		
	COLUMBUS			
	LUCAS	252.0		
	AMHERSTBURG	330.0		
	SYLVANIA			
	BOIS BLANC	378.0		
	SPRINGVALE			
	ORISKANY			
SILURIAN	BASS ISLANDS	399.0		
	G SHALE	433.3		
	F SHALE	439.5		
	F SALT			
	E CARBONATE	482.5		
	D SALT [illegible]	510.0		
	C SHALE	525.0		
	B MARKER	575.2		
	B EQUIVALENT			
	B SALT	583.0		
	B ANHYDRITE			
	A2 CARBONATE	659.5		
	A2 SALT			
SILURIAN	A2 ANHYDRITE	702.3		
	A1 CARBONATE	707.8		
	A1 SALT			
	A1 ANHYDRITE	742.7		
	GUELPH	749.0		
	ERAMOSA			
	GOAT ISLAND	753.4		
	GASPORT/WIARTON	763.4		
	DECEW			
	ROCHESTER	780.6		
	IRONDEQUOIT			
	REYNALES/FOSSIL HILL	787.9		
	THOROLD			
	GRIMSBY			
	CABOT HEAD	789.0		
	MANITOULIN			
	WHIRLPOOL			
ORDOVICIAN	QUEENSTON			
	BLUE MOUNTAIN - GEORG. BAY			
	COLLINGWOOD			
	COBOURG			
	VERULAM			
	KIRKFIELD			
	COBOCONK			
	GULL RIVER			
	SHADOW LAKE			
CAMBRIAN				
PRECAMBRIAN				

GEOLOGY BY: T.R. Carter

T.R. Carter

CTY Lambton TWP Moore BLK TRAC LOT 23 CON XI
WELL NAME Dow #78 Moore 23-XI PERMIT 7034 INIT CLASS SH
OPERATOR Dow Chemical Canada Inc. TARGET SAL CUR STATUS SH

DRILLING DATA
CONTRACTOR Corunna Drilling Ltd
RIG TYPE Rotary DEPTHS
CABLE TOP KB ELEV 198.7
BOT LOGGER 751.0
ROTRY TOP 3.7 DRILLER 751.0
BOT 751.0 DEEP END
DRLG FLD PLUG BK

DATES
PERMIT 1986-07-17
SPUD 1987-01-22
COMPTD 1987-02-02
OFFCNF 1987-03-04
WRKOVR
ABNDND

COORDINATES
NORTH 278.8 m
SOUTH m
EAST 282.5 m
WEST m
LAT 42 53 22
LONG 82 24 15

SAMPLES
TOP 94
BOT 751
TRAY 9582

INITIAL GAS RECORD

INTERVAL	FLOW	SIP
–		
–		
–		
–		
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CASING AND TUBING RECORD

DIAM	WEIGHT	SET AT	HOW SET	RECOV
339.7	81.1	92.5	CEM	0
244.0	53.6	575.5	CEM	0
177.8	29.8	739.8	HAN	0
114.0	14.1	746.9	HAN	0

COMPLETION DATA
GAS 10³m³/d
OIL m³/d
SIP kPa
FORM A-2 Salt, B-Salt
INTRVL m
m
m

INITIAL OIL RECORD

INTERVAL	FLOW	DENSITY
–		
–		
–		
–		
–		
–		

LOGGING RECORD

INTERVAL	TYPE	COMPANY
75 – 750.5	GRL	SCH
92 – 744.0	CNFD	"
68 – 576.0	BDND	"
695 – 750.5	CCL	"
–		
–		
–		

PERF ☐ OPEN HOLE ☒

REMARKS
Top of bedrock not recorded by operator

INITIAL WATER RECORD

INTERVAL	STAT LEV	TYPE
–		
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CORING RECORD

INTERVAL	LOCATION	NO	ANAL
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–			
–			
–			
–			

GEOLOGICAL CONTACTS	TOP	ELEV	THICK
KB /LAKE LEVEL	0.0		
DRIFT /LAKE BOTTOM	3.7		
DEVONIAN: PORT LAMBTON			
DEVONIAN: KETTLE POINT	?		
DEVONIAN: HAMILTON	99.1		
DEVONIAN: MARCELLUS			
DEVONIAN: DUNDEE	183.5		
DEVONIAN: COLUMBUS			
DEVONIAN: LUCAS	220.0		
DEVONIAN: AMHERSTBURG	295.0		
DEVONIAN: SYLVANIA			
DEVONIAN: BOIS BLANC	346.0		
DEVONIAN: SPRINGVALE			
DEVONIAN: ORISKANY			
SILURIAN: BASS ISLANDS	363.0		
SILURIAN: G SHALE	412.3		
SILURIAN: F SHALE	418.6		
SILURIAN: F SALT			
SILURIAN: E CARBONATE	516.1		
SILURIAN: D SALT/EQUIVALENT	542.6		
SILURIAN: C SHALE	552.9		
SILURIAN: B MARKER	568.0		
SILURIAN: B EQUIVALENT			
SILURIAN: B SALT	574.7		
SILURIAN: B ANHYDRITE			
SILURIAN: A2 CARBONATE	668.7		
SILURIAN: A2 SALT	716.0		
SILURIAN: A2 ANHYDRITE			
SILURIAN: A1 CARBONATE			
SILURIAN: A1 SALT			
SILURIAN: A1 ANHYDRITE			
SILURIAN: GUELPH			
SILURIAN: ERAMOSA			
SILURIAN: GOAT ISLAND			
SILURIAN: GASPORT/MARTON			
SILURIAN: DECEW			
SILURIAN: ROCHESTER			
SILURIAN: IRONDEQUOIT			
SILURIAN: REYNALES/FOSSIL HILL			
SILURIAN: THOROLD			
SILURIAN: GRIMSBY			
SILURIAN: CABOT HEAD			
SILURIAN: MANITOULIN			
SILURIAN: WHIRLPOOL			
ORDOVICIAN: QUEENSTON			
ORDOVICIAN: BLUE MOUNTAIN - GEORG BAY			
ORDOVICIAN: COLLINGWOOD			
ORDOVICIAN: COBOURG			
ORDOVICIAN: VERULAM			
ORDOVICIAN: KIRKFIELD			
ORDOVICIAN: COBOCONK			
ORDOVICIAN: GULL RIVER			
ORDOVICIAN: SHADOW LAKE			
CAMBRIAN			
PRECAMBRIAN			

GEOLOGY BY T.R. Carter

CTY Lambton TWP Moore BLK TRAC LOT 23 CON XI
WELL NAME Dow #79 Moore 23-XI PERMIT 7035 INIT CLASS SH
OPERATOR Dow Chemical Canada Inc. TARGET SAL CUR STATUS SH

DRILLING DATA
CONTRACTOR Corunna Drilling Ltd
RIG TYPE Rotary DEPTHS
CABLE TOP KB ELEV 198.9
BOT LOGGER 750.0
ROTRY TOP 3.7 DRILLER 749.0
BOT 749.0 DEEP END
DRLG FLD PLUG BK

DATES
PERMIT 1986-07-17
SPUD 1987-02-05
COMPTD 1987-02-15
OFFCNF
WRKOVR
ABNDND

COORDINATES
NORTH 171.8 m
SOUTH m
EAST 98.5 m
WEST m
LAT 42 53 19
LONG 82 24 23

SAMPLES
TOP 94
BOT 748
TRAY 9591

INITIAL GAS RECORD

INTERVAL	FLOW	SIP
–		
–		
–		
–		
–		
–		

CASING AND TUBING RECORD

DIAM	WEIGHT	SET AT	HOW SET	RECOV
339.7	81.1	92.5	CEM	0
244.0	53.6	574.0	CEM	0
177.8	29.8	736.8	HAN	0
114.0	14.1	745.5	HAN	0

COMPLETION DATA
GAS 10³m³/d
OIL m³/d
SIP kPa
FORM A-2 Salt, B-Salt
INTRVL m
m
m

INITIAL OIL RECORD

INTERVAL	FLOW	DENSITY
–		
–		
–		
–		
–		
–		

LOGGING RECORD

INTERVAL	TYPE	COMPANY
92 – 749.5	GRL	SCH
92 – 743.0	CNFD	"
25 – 580.0	CBND	"
–		
–		
–		
–		

PERF ☐ OPEN HOLE ☒

REMARKS
Top of bedrock not recorded by operator

INITIAL WATER RECORD

INTERVAL	STAT LEV	TYPE
–		
–		
–		
–		
–		
–		

CORING RECORD

INTERVAL	LOCATION	NO	ANAL
–			
–			
–			
–			
–			

GEOLOGICAL CONTACTS	TOP	ELEV	THICK
KB /LAKE LEVEL	0.0		
DRIFT /LAKE BOTTOM	3.7		
DEVONIAN: PORT LAMBTON			
DEVONIAN: KETTLE POINT	46.0		
DEVONIAN: HAMILTON	101.6		
DEVONIAN: MARCELLUS			
DEVONIAN: DUNDEE	185.7		
DEVONIAN: COLUMBUS			
DEVONIAN: LUCAS	224.0		
DEVONIAN: AMHERSTBURG	298.0		
DEVONIAN: SYLVANIA			
DEVONIAN: BOIS BLANC	349.0		
DEVONIAN: SPRINGVALE			
DEVONIAN: ORISKANY			
SILURIAN: BASS ISLANDS	370.0		
SILURIAN: G SHALE	413.0		
SILURIAN: F SHALE	419.3		
SILURIAN: F SALT	449.0		
SILURIAN: E CARBONATE	516.8		
SILURIAN: D SALT/EQUIVALENT	543.0		
SILURIAN: C SHALE	552.9		
SILURIAN: B MARKER	568.0		
SILURIAN: B EQUIVALENT			
SILURIAN: B SALT	575.4		
SILURIAN: B ANHYDRITE			
SILURIAN: A2 CARBONATE	669.6		
SILURIAN: A2 SALT	714.0		
SILURIAN: A2 ANHYDRITE			
SILURIAN: A1 CARBONATE			
SILURIAN: A1 SALT			
SILURIAN: A1 ANHYDRITE			
SILURIAN: GUELPH			
SILURIAN: ERAMOSA			
SILURIAN: GOAT ISLAND			
SILURIAN: GASPORT/MARTON			
SILURIAN: DECEW			
SILURIAN: ROCHESTER			
SILURIAN: IRONDEQUOIT			
SILURIAN: REYNALES/FOSSIL HILL			
SILURIAN: THOROLD			
SILURIAN: GRIMSBY			
SILURIAN: CABOT HEAD			
SILURIAN: MANITOULIN			
SILURIAN: WHIRLPOOL			
ORDOVICIAN: QUEENSTON			
ORDOVICIAN: BLUE MOUNTAIN - GEORG BAY			
ORDOVICIAN: COLLINGWOOD			
ORDOVICIAN: COBOURG			
ORDOVICIAN: VERULAM			
ORDOVICIAN: KIRKFIELD			
ORDOVICIAN: COBOCONK			
ORDOVICIAN: GULL RIVER			
ORDOVICIAN: SHADOW LAKE			
CAMBRIAN			
PRECAMBRIAN			

GEOLOGY BY T.R. Carter

CTY Lambton TWP Moore BLK TRAC LOT 23 CON XI

WELL NAME Dow #77 Moore 23-XI PERMIT 7033 INIT CLASS SH

OPERATOR Dow Chemical Canada Inc. TARGET SAL CUR STATUS SH

DRILLING DATA

CONTRACTOR Corunna Drilling Ltd
RIG TYPE Rotary
CABLE TOP
BOT
ROTRY TOP 3.7
BOT 749.0
DRLG FLD

DEPTHS
KB ELEV 198.4
LOGGER 749.0
DRILLER 749.0
DEEP END
PLUG BK

DATES

PERMIT 1986-07-17
SPUD 1987-02-17
COMPTD 1987-02-27
OFFCNF 1987-03-25
WRKOVR
ABNDND

COORDINATES

NORTH 492.9 m
SOUTH m
EAST 279.8 m
WEST m
LAT 42 53 30
LONG 82 24 15

SAMPLES

TOP 94
BOT 751
TRAY 6188

INITIAL GAS RECORD

INTERVAL	FLOW	SIP
–		
–		
–		
–		
–		
–		

CASING AND TUBING RECORD

DIAM	WEIGHT	SET AT	HOW SET	RECOV
339	81.1	92	CEM	
244	53.6	574	CEM	
177.8	29.8	736	HAN	
114	14.1	745	HAN	

COMPLETION DATA

GAS $10^3m^3/d$
OIL m^3/d
SIP kPa
FORM A-2 Salt, B-Salt
INTRVL m
m
m

INITIAL OIL RECORD

INTERVAL	FLOW	DENSITY
–		
–		
–		
–		
–		
–		

LOGGING RECORD

INTERVAL	TYPE	COMPANY
0 – 748.5	GRL	SCH
0 – 748.5	CNFD	"
15 – 580	CBND	"
–		
–		
–		

PERF ☐ OPEN HOLE ☒

REMARKS

Top of bedrock not reported by operator

A-2 Shale at 703.0

INITIAL WATER RECORD

INTERVAL	STAT LEV	TYPE
–		
–		
–		
–		
–		
–		

CORING RECORD

INTERVAL	LOCATION	NO	MM
–			
–			
–			
–			
–			

GEOLOGICAL CONTACTS

		TOP	ELEV	THICK
	KB /~~SAND MINE~~ X	0.0		
	DRIFT /~~LAKE BOTTOM~~ X	1.7		
DEVONIAN	PORT LAMBTON			
	KETTLE POINT	4.3		
	HAMILTON	98.0		
	MARCELLUS			
	DUNDEE	182.1		
	COLUMBUS			
	LUCAS	222.0		
	AMHERSTBURG	297.0		
	SYLVANIA			
	BOIS BLANC	338.0		
	SPRINGVALE			
	ORISKANY			
SILURIAN	BASS ISLANDS	353.0		
	G SHALE	410.7		
	F SHALE	417.1		
	F SALT	441.0		
	E CARBONATE	517.8		
	D SALT/EQUIVALENT	543.6		
	C SHALE	554.4		
	B MARKER	569.3		
	B EQUIVALENT			
	B SALT	575.3		
	B ANHYDRITE			
	A2 CARBONATE	668.1		
	A2 SALT	711.5		
SILURIAN	A2 ANHYDRITE			
	A1 CARBONATE			
	A1 SALT			
	A1 ANHYDRITE			
	GUELPH			
	ERAMOSA			
	GOAT ISLAND			
	GASPORT/MARTON			
	DECEW			
	ROCHESTER			
	IRONDEQUOIT			
	REYNALES/FOSSIL HILL			
	THOROLD			
	GRIMSBY			
	CABOT HEAD			
	MANITOULIN			
	WHIRLPOOL			
ORDOVICIAN	QUEENSTON			
	BLUE MOUNTAIN - GEORG BAY			
	COLLINGWOOD			
	COBOURG			
	VERULAM			
	KIRKFIELD			
	COBOCONK			
	GULL RIVER			
	SHADOW LAKE			
CAMBRIAN				
PRECAMBRIAN				

GEOLOGY BY T.R. Carter

CTY Lambton TWP Moore BLK TRAC LOT 23 CON XI

WELL NAME Dow #73 Moore 23-XI PERMIT 7032 INIT CLASS SH

OPERATOR Dow Chemical Canada Inc. TARGET SAL CUR STATUS SH

DRILLING DATA

CONTRACTOR Corunna Drilling Ltd
RIG TYPE Rotary
CABLE TOP
BOT
ROTRY TOP 2.7
BOT 749.0
DRLG FLD

DEPTHS
KB ELEV 196.5
LOGGER 749.2
DRILLER 749.0
DEEP END
PLUG BK

DATES

PERMIT 1986-07-17
SPUD 1987-02-28
COMPTD 1987-03-08
OFFCNF 1987-04-07
WRKOVR
ABNDND

COORDINATES

NORTH m
SOUTH 547.7 m
EAST 88.4 m
WEST m
LAT 42 53 39
LONG 82 24 22

SAMPLES

TOP 94
BOT 728
TRAY 9690

INITIAL GAS RECORD

INTERVAL	FLOW	SIP
–		
–		
–		
–		
–		
–		

CASING AND TUBING RECORD

DIAM	WEIGHT	SET AT	HOW SET	RECOV
339	81.1	92	CEM	0
244	53.6	577	CEM	0
177.8	29.8	736.3	HAN	0
114	14.1	745.6	HAN	0

COMPLETION DATA

GAS $10^3m^3/d$
OIL m^3/d
SIP kPa
FORM A-2 Salt, B-Salt
INTRVL m
m
m

INITIAL OIL RECORD

INTERVAL	FLOW	DENSITY
–		
–		
–		
–		
–		
–		

LOGGING RECORD

INTERVAL	TYPE	COMPANY
92 – 749	GRL	SCH
92 – 749	CNFD	"
10 – 577	CBND	"
–		
–		
–		

PERF ☐ OPEN HOLE ☒

REMARKS

Top of bedrock not reported by operator

A-2 Shale at 705.3

INITIAL WATER RECORD

INTERVAL	STAT LEV	TYPE
–		
–		
–		
–		
–		
–		

CORING RECORD

INTERVAL	LOCATION	NO	MM
–			
–			
–			
–			
–			

GEOLOGICAL CONTACTS

		TOP	ELEV	THICK
	KB /~~LUKE LEVEL~~ X	0.0		
	DRIFT /~~LAKE BOTTOM~~ X	2.7		
DEVONIAN	PORT LAMBTON			
	KETTLE POINT			
	HAMILTON	97.0		
	MARCELLUS			
	DUNDEE	181.5		
	COLUMBUS			
	LUCAS	217.0		
	AMHERSTBURG	298.0		
	SYLVANIA			
	BOIS BLANC	345.0		
	SPRINGVALE			
	ORISKANY			
SILURIAN	BASS ISLANDS	361.0		
	G SHALE	414.0		
	F SHALE	420.7		
	F SALT	446.0		
	E CARBONATE	520.7		
	D SALT/EQUIVALENT	546.8		
	C SHALE	558.1		
	B MARKER	571.3		
	B EQUIVALENT			
	B SALT	578.1		
	B ANHYDRITE			
	A2 CARBONATE	670.7		
	A2 SALT	714.0		
SILURIAN	A2 ANHYDRITE			
	A1 CARBONATE			
	A1 SALT			
	A1 ANHYDRITE			
	GUELPH			
	ERAMOSA			
	GOAT ISLAND			
	GASPORT/MARTON			
	DECEW			
	ROCHESTER			
	IRONDEQUOIT			
	REYNALES/FOSSIL HILL			
	THOROLD			
	GRIMSBY			
	CABOT HEAD			
	MANITOULIN			
	WHIRLPOOL			
ORDOVICIAN	QUEENSTON			
	BLUE MOUNTAIN - GEORG BAY			
	COLLINGWOOD			
	COBOURG			
	VERULAM			
	KIRKFIELD			
	COBOCONK			
	GULL RIVER			
	SHADOW LAKE			
CAMBRIAN				
PRECAMBRIAN				

GEOLOGY BY T.R. Carter

T.R. Carter

CTY Lambton TWP Moore BLK TRAC LOT 67 CON Front

WELL NAME Shell Cavern 2A Moore 67-Front PERMIT 7145 INIT CLASS LPG

OPERATOR Shell Canada Products Ltd TARGET SAL CUR STATUS LPG

DRILLING DATA				DATES		COORDINATES			SAMPLES	
CONTRACTOR	B & S Rotary Drilling Ltd			PERMIT	1987-05-27	NORTH	211.2	m	TOP	62
RIG TYPE	Rotary	DEPTHS		SPUD	1987-06-19	SOUTH		m	BOT	699
CABLE TOP		KB ELEV	193.2	COMPTD	1987-07-04	EAST		m	TRAY	9234
BOT		LOGGER	749.0	OFFCNF	1987-08-03	WEST	673.1	m		
ROTRY TOP	3.5	DRILLER	744.0	WRKOVR		LAT	42 54 06			
BOT	749.0	DEEP END		ABNDND		LONG	82 26 46			
DRLG FLD		PLUG BK								

INITIAL GAS RECORD

INTERVAL	FLOW	SIP
50 –	Show	
–		
–		
–		
–		
–		

CASING AND TUBING RECORD

DIAM	WEIGHT	SET AT	HOW SET	RECOV
508	197.9	59.9	CEM	
339.7	90.8	343.0	CEM	
244	53.6	712.0	CEM	
177.8	52.1	745.5	HAN	
114	20.1	746.7	HAN	

COMPLETION DATA

GAS	$10^3 m^3/d$
OIL	m^3/d
SIP	kPa
FORM	
INTRVL	m
	m
	m

INITIAL OIL RECORD

INTERVAL	FLOW	DENSITY
–		
–		
–		
–		
–		

LOGGING RECORD

INTERVAL	TYPE	COMPANY
0 – 725.0	NEUT	Computalog
0 – 685.3	CBND	"
0 – 686.5	VERL	Dres. Atlas
498 – 727	GRL	Computalog
–		
–		
–		

PERF ☐ OPEN HOLE ☐

REMARKS

Cavern roof at 729.5, cavern bottom at 749m. Depth to bedrock not reported by operator. A-2 Shale at 718.0.

INITIAL WATER RECORD

INTERVAL	STAT LEV	TYPE
–		
–		
–		
–		
–		
–		

CORING RECORD

INTERVAL	LOCATION	NO	mm
–			
–			
–			
–			
–			

GEOLOGICAL CONTACTS	TOP	ELEV	THICK
KB / LAKE LEVEL	0.0		
DRIFT / LAKE BOTTOM	3.5		
DEVONIAN: PORT LAMBTON			
KETTLE POINT	64.0		
HAMILTON	107.0		
MARCELLUS			
DUNDEE	193.5		
COLUMBUS			
LUCAS	227.0		
AMHERSTBURG	305.0		
SYLVANIA			
BOIS BLANC	353.0		
SPRINGVALE			
ORISKANY			
SILURIAN: BASS ISLANDS	366.0		
G SHALE	414.5		
F SHALE	425.0		
F SALT	448.4		
E CARBONATE	528.2		
D SALT/EQUIVALENT	555.2		
C SHALE	566.3		
B MARKER	585.9		
B EQUIVALENT			
B SALT	593.0		
B ANHYDRITE			
A2 CARBONATE	678.7		
A2 SALT	727.5		
SILURIAN: A2 ANHYDRITE			
A1 CARBONATE			
A1 SALT			
A1 ANHYDRITE			
GUELPH			
ERAMOSA			
GOAT ISLAND			
GASPORT/WARTON			
DECEW			
ROCHESTER			
IRONDEQUOIT			
REYNALES/FOSSIL HILL			
THOROLD			
GRIMSBY			
CABOT HEAD			
MANITOULIN			
WHIRLPOOL			
ORDOVICIAN: QUEENSTON			
BLUE MOUNTAIN - GEORG BAY			
COLLINGWOOD			
COBOURG			
VERULAM			
KIRKFIELD			
COBOCONK			
GULL RIVER			
SHADOW LAKE			
CAMBRIAN			
PRECAMBRIAN			

GEOLOGY BY T.R. Carter

CTY Lambton TWP Sarnia BLK TRAC 1 LOT 11 CON Range IV

WELL NAME EPC Cavern C-4043A Sarnia 11-Range IV PERMIT 712 INIT CLASS LPG

OPERATOR Esso Petroleum Canada TARGET SAL CUR STATUS LPG

DRILLING DATA				DATES		COORDINATES			SAMPLES	
CONTRACTOR	Corunna Drilling Ltd			PERMIT	1987-04-03	NORTH		m	TOP	77
RIG TYPE	Rotary	DEPTHS		SPUD	1987-04-07	SOUTH	78.8	m	BOT	645
CABLE TOP		KB ELEV	188.1	COMPTD	1987-04-27	EAST		m	TRAY	7569
BOT		LOGGER		OFFCNF	1987-05-27	WEST	415.4	m		
ROTRY TOP	3.7	DRILLER	653.0	WRKOVR		LAT	42 56 59			
BOT	653.0	DEEP END		ABNDND		LONG	82 29 07			
DRLG FLD		PLUG BK								

INITIAL GAS RECORD

INTERVAL	FLOW	SIP
–		
–		
–		
–		
–		
–		

CASING AND TUBING RECORD

DIAM	WEIGHT	SET AT	HOW SET	RECOV
508	139.9	75.9	CEM	
340	81.1	374.2	CEM	
273	67.1	624.8	CEM	
178	34.3	703.3	HAN	

COMPLETION DATA

GAS	$10^3 m^3/d$
OIL	m^3/d
SIP	kPa
FORM	
INTRVL	m
	m
	m

INITIAL OIL RECORD

INTERVAL	FLOW	DENSITY
–		
–		
–		
–		
–		

LOGGING RECORD

INTERVAL	TYPE	COMPANY
76 – 625	CAL	Dres. Atlas
0 – 595.5	CBND	"
653 – 704.0	SONR	"
0 – 595.5	VERL	"
–		
–		
–		

PERF ☐ OPEN HOLE ☐

REMARKS

Top of bedrock not reported by operator. Samples taken every 5 metres. Samples missing.

INITIAL WATER RECORD

INTERVAL	STAT LEV	TYPE
–		
–		
–		
–		
–		
–		

CORING RECORD

INTERVAL	LOCATION	NO	mm
–			
–			
–			
–			
–			

GEOLOGICAL CONTACTS	TOP	ELEV	THICK
KB /LAKE LEVEL	0.0		
DRIFT /LAKE BOTTOM	3.7		
DEVONIAN: PORT LAMBTON			
KETTLE POINT			
HAMILTON	77.0		
MARCELLUS			
DUNDEE	148.0		
COLUMBUS			
LUCAS	192.0		
AMHERSTBURG	280.0		
SYLVANIA			
BOIS BLANC	335.0		
SPRINGVALE			
ORISKANY			
SILURIAN: BASS ISLANDS	348.0		
G SHALE	430.3		
F SHALE	437.0		
F SALT	486.0		
E CARBONATE	570.0		
D SALT/EQUIVALENT	600.0		
C SHALE	613.0		
B MARKER			
B EQUIVALENT			
B SALT	635.0		
B ANHYDRITE			
A2 CARBONATE			
A2 SALT			
SILURIAN: A2 ANHYDRITE			
A1 CARBONATE			
A1 SALT			
A1 ANHYDRITE			
GUELPH			
ERAMOSA			
GOAT ISLAND			
GASPORT/WARTON			
DECEW			
ROCHESTER			
IRONDEQUOIT			
REYNALES/FOSSIL HILL			
THOROLD			
GRIMSBY			
CABOT HEAD			
MANITOULIN			
WHIRLPOOL			
ORDOVICIAN: QUEENSTON			
BLUE MOUNTAIN - GEORG BAY			
COLLINGWOOD			
COBOURG			
VERULAM			
KIRKFIELD			
COBOCONK			
GULL RIVER			
SHADOW LAKE			
CAMBRIAN			
PRECAMBRIAN			

GEOLOGY BY T.R. Carter

CTY Lambton TWP Sarnia BLK TRAC LOT 11 CON Range IV

WELL NAME ECC Cavern 4041A Sarnia 11-Range IV PERMIT 7202 INIT CLASS LPG

OPERATOR Esso Chemical Canada TARGET SAL CUR STATUS LPG

DRILLING DATA

CONTRACTOR Corunna Drilling Ltd
RIG TYPE Rotary DEPTHS
CABLE TOP KB ELEV 188.1
BOT LOGGER
ROTRY TOP 3.7 DRILLER 806.7
BOT 806.7 DEEP END
DRLG FLD PLUG BK

DATES

PERMIT 1987-11-18
SPUD 1987-11-18
COMPTD 1987-12-03
OFFCNF 1988-01-02
WRKOVR
ABNDND

COORDINATES

NORTH m
SOUTH 36.3 m
EAST 184.5 m
WEST m
LAT 42 57 01
LONG 82 24 16

SAMPLES

TOP 80
BOT 768
TRAY 9249

INITIAL GAS RECORD

INTERVAL	FLOW	SIP
33.5 – 775		

CASING AND TUBING RECORD

DIAM	WEIGHT	SET AT	HOW SET	RECOV
508	198	76	CEM	
340	81.1	385	CEM	
245	59.3	737	CEM	
178	34.2	801.8	HAN	
114	14.1	803.6	HAN	

COMPLETION DATA

GAS $10^3 m^3/d$
OIL m^3/d
SIP kPa
FORM
INTRVL m
m
m
PERF ( ) OPEN HOLE ( )

INITIAL OIL RECORD

INTERVAL	FLOW	DENSITY

LOGGING RECORD

INTERVAL	TYPE	COMPANY
0 – 718.3	GRL	Dres.-Atlas
0 – 719.5	VERL	"
0 – 718.3	CBND	"

REMARKS

Cavern storage for propylene Top of Cavern at 782.8m. Samples for Salina unreliable

INITIAL WATER RECORD

INTERVAL	STAT LEV	TYPE

CORING RECORD

INTERVAL	LOCATION	NO	mm

GEOLOGICAL CONTACTS	TOP	ELEV	THICK
KB / LAKE LEVEL	0.0		
DRIFT / LAKE BOTTOM	3.7		
DEVONIAN: PORT LAMBTON			
KETTLE POINT	39.0		
HAMILTON	50.0		
MARCELLUS			
DUNDEE	147.5		
COLUMBUS			
LUCAS	202.0		
AMHERSTBURG	271.0		
SYLVANIA			
BOIS BLANC	339.0		
SPRINGVALE			
ORISKANY			
SILURIAN: BASS ISLANDS	372.0		
G SHALE	433.3		
F SHALE	440.3		
F SALT	472.2		
E CARBONATE	571.9		
D SALT/EQUIVALENT	598.5		
C SHALE	609.0		
B MARKER	628.6		
B EQUIVALENT			
B SALT	636.0		
B ANHYDRITE			
A2 CARBONATE	729.0		
A2 SALT	775.0		
A2 ANHYDRITE			
A1 CARBONATE			
A1 SALT			
A1 ANHYDRITE			
GUELPH			
ERAMOSA			
GOAT ISLAND			
GASPORT/WIARTON			
DECEW			
ROCHESTER			
IRONDEQUOIT			
REYNALES/FOSSIL HILL			
THOROLD			
GRIMSBY			
CABOT HEAD			
MANITOULIN			
WHIRLPOOL			
ORDOVICIAN: QUEENSTON			
BLUE MOUNTAIN - GEORG BAY			
COLLINGWOOD			
COBOURG			
VERULAM			
KIRKFIELD			
COBOCONK			
GULL RIVER			
SHADOW LAKE			
CAMBRIAN			
PRECAMBRIAN			

GEOLOGY BY T.R. Carter

CTY Lambton TWP Sarnia BLK TRAC LOT 12 CON Range IV

WELL NAME MOE Deep Obs. 1 Sarnia 12-IV R. PERMIT 7188 INIT CLASS OBS

OPERATOR Ontario Ministry of the Environment TARGET DEV CUR STATUS OBS

DRILLING DATA

CONTRACTOR Longyear Canada Ltd
RIG TYPE Diamond Drill DEPTHS
CABLE TOP KB ELEV 183.4
BOT LOGGER
ROTRY TOP 0.0 DRILLER 303.0
BOT 303.0 DEEP END
DRLG FLD PLUG BK

DATES

PERMIT 1987-09-15
SPUD 1987-09-16
COMPTD 1987-09-29
OFFCNF 1987-10-29
WRKOVR
ABNDND

COORDINATES

NORTH m
SOUTH 34.1 m
EAST 265.0 m
WEST m
LAT 42 57 15
LONG 82 24 13

SAMPLES

TOP 41
BOT 303
TRAY 9205-9206

INITIAL GAS RECORD

INTERVAL	FLOW	SIP
77 – 85		
125 –		

CASING AND TUBING RECORD

DIAM	WEIGHT	SET AT	HOW SET	RECOV
114	38.6	41	CEM	

COMPLETION DATA

GAS $10^3 m^3/d$
OIL m^3/d
SIP kPa
FORM
INTRVL m
m
m
PERF ( ) OPEN HOLE ( )

INITIAL OIL RECORD

INTERVAL	FLOW	DENSITY
144 – 164		

LOGGING RECORD

INTERVAL	TYPE	COMPANY

REMARKS

INITIAL WATER RECORD

INTERVAL	STAT LEV	TYPE

CORING RECORD

INTERVAL	LOCATION	NO	mm
41.2 – 303.0	PRL	954	

GEOLOGICAL CONTACTS	TOP	ELEV	THICK
KB / LAKE LEVEL	0.0		
DRIFT / LAKE BOTTOM	0.0		
DEVONIAN: PORT LAMBTON			
KETTLE POINT	32.0		
HAMILTON	50.0		
MARCELLUS			
DUNDEE	144.0		
COLUMBUS	182.7		
LUCAS	183.5		
AMHERSTBURG	278.4		
SYLVANIA			
BOIS BLANC			
SPRINGVALE			
ORISKANY			
SILURIAN: BASS ISLANDS			
G SHALE			
F SHALE			
F SALT			
E CARBONATE			
D SALT/EQUIVALENT			
C SHALE			
B MARKER			
B EQUIVALENT			
B SALT			
B ANHYDRITE			
A2 CARBONATE			
A2 SALT			
A2 ANHYDRITE			
A1 CARBONATE			
A1 SALT			
A1 ANHYDRITE			
GUELPH			
ERAMOSA			
GOAT ISLAND			
GASPORT/WIARTON			
DECEW			
ROCHESTER			
IRONDEQUOIT			
REYNALES/FOSSIL HILL			
THOROLD			
GRIMSBY			
CABOT HEAD			
MANITOULIN			
WHIRLPOOL			
ORDOVICIAN: QUEENSTON			
BLUE MOUNTAIN - GEORG BAY			
COLLINGWOOD			
COBOURG			
VERULAM			
KIRKFIELD			
COBOCONK			
GULL RIVER			
SHADOW LAKE			
CAMBRIAN			
PRECAMBRIAN			

GEOLOGY BY T.R. Carter

CTY Lambton TWP Sarnia BLK TRAC LOT 12 CON Range IV

WELL NAME ECC Cavern 4042A Sarnia 12-IV RR PERMIT 7174 INIT CLASS LPG

OPERATOR Esso Chemical Canada TARGET SAL CUR STATUS LPG

DRILLING DATA				DATES		COORDINATES			SAMPLES	
CONTRACTOR	Corunna Drilling Ltd			PERMIT	1987-08-14	NORTH	184.5	m	TOP	122
RIG TYPE		DEPTHS		SPUD	1987-08-16	SOUTH		m	BOT	450
CABLE TOP		KB ELEV	188.3	COMPTD	1987-08-30	EAST	207.9	m	TRAY	7983
BOT		LOGGER		OFFCHF		WEST		m		
ROTRY TOP	4.4	DRILLER	703.0	WRKOVR		LAT	42 57 09			
BOT	703.0	DEEP END		ABNDND		LONG	82 24 16			
DRLG FLD		PLUG BK								

INITIAL GAS RECORD

INTERVAL	FLOW	SIP
662 –		
–		
–		
–		
–		
–		
–		

CASING AND TUBING RECORD

DIAM	WEIGHT	SET AT	HOW SET	RECOV
508	139.9	70.0	CEM	0
340	81.1	399.4	CEM	0
273	67.7	624.0	CEM	0
194	39.3	698.4	HAN	0
140	25.3	700.0	HAN	0

COMPLETION DATA

GAS $10^3m^3/d$

OIL m^3/d

SIP kPa

FORM

INTRVL m

m

m

INITIAL OIL RECORD

INTERVAL	FLOW	DENSITY
–		
–		
–		
–		
–		
–		

LOGGING RECORD

INTERVAL	TYPE	COMPANY
0.0 – 602.1	GRL	DRES.-ATLAS
0.0 – 602.1	CBND	"
333.8 – 625.1	CALP	"
0.0 – 595.0	VERL	"
661.7 – 702.2	SONR	"
–		
–		

PERF ☐ OPEN HOLE ☐

REMARKS

Ethylene at 662.

Cavern top at 661.6.

Cavern bottom at 730.0.

Top at Bedrock not reported by operator.

INITIAL WATER RECORD

INTERVAL	STAT LEV	TYPE
–		
–		
–		
–		
–		
–		
–		

CORING RECORD

INTERVAL	LOCATION	NO	mm
–			
–			
–			
–			
–			
–			

Poor samples.

No samples or logs below 450m, tops inferred from adjacent well.

GEOLOGICAL CONTACTS	TOP	ELEV	THICK
KB / LAKE LEVEL	0.0		
DRIFT / LAKE BOTTOM	4.4		
PORT LAMBTON			
KETTLE POINT	36.8		
HAMILTON	51.9		
MARCELLUS			
DUNDEE	146.4		
COLUMBUS			
LUCAS	189.0		
AMHERSTBURG	280.0		
SYLVANIA			
BOIS BLANC	327.0		
SPRINGVALE			
ORISKANY			
BASS ISLANDS	355.0		
G SHALE	433.8		
F SHALE	440.6		
F SALT	469.4		
E CARBONATE	572.8		
D SALT/EQUIVALENT	600.0		
C SHALE	614.5		
B MARKER	630.6		
B EQUIVALENT			
B SALT	637.9		
B ANHYDRITE			
A2 CARBONATE	NP		
A2 SALT	NP		
A2 ANHYDRITE			
A1 CARBONATE			
A1 SALT			
A1 ANHYDRITE			
GUELPH			
ERAMOSA			
GOAT ISLAND			
GASPORT/WIARTON			
DECEW			
ROCHESTER			
IRONDEQUOIT			
REYNALES/FOSSIL HILL			
THOROLD			
GRIMSBY			
CABOT HEAD			
MANITOULIN			
WHIRLPOOL			
QUEENSTON			
BLUE MOUNTAIN - GEORG BAY			
COLLINGWOOD			
COBOURG			
VERULAM			
KIRKFIELD			
COBOCONK			
GULL RIVER			
SHADOW LAKE			
CAMBRIAN			
PRECAMBRIAN			

GEOLOGY BY T.R. Carter

CTY Lambton TWP Sombra BLK TRAC LOT 6 CON XII

WELL NAME Union Bickford No. 35 Sombra 6-XII PERMIT 7020 INIT CLASS NGS

OPERATOR Union Gas Ltd TARGET SAL CUR STATUS NGS

DRILLING DATA				DATES		COORDINATES			SAMPLES	
CONTRACTOR	Shaw Drilling Co. Ltd			PERMIT	1986-06-05	NORTH	213.4	m	TOP	51
RIG TYPE	Cable	DEPTHS		SPUD	1986-06-12	SOUTH		m	BOT	653
CABLE TOP	1.2	KB ELEV	185.5	COMPTD	1987-04-08	EAST		m	TRAY	9181-
BOT	653.0	LOGGER	652.0	OFFCHF	1987-05-07	WEST	176.8	m		9182
ROTRY TOP		DRILLER	653.0	WRKOVR		LAT	42 43 06.5			
BOT		DEEP END		ABNDND		LONG	82 25 20			
DRLG FLD		PLUG BK								

INITIAL GAS RECORD

INTERVAL	FLOW	SIP
–		
–		
–		
–		
–		
–		
–		

CASING AND TUBING RECORD

DIAM	WEIGHT	SET AT	HOW SET	RECOV
340	71.5	51.0	SHO	0
273	60.3	181.6	SHO	181.6
219	35.7	377.2	CEM	0
178	29.8	564.5	CEM	0

COMPLETION DATA

GAS $10^3m^3/d$

OIL m^3/d

SIP 3300 kPa

FORM Guelph

INTRVL 568-652 m

m

m

INITIAL OIL RECORD

INTERVAL	FLOW	DENSITY
–		
–		
–		
–		
–		
–		

LOGGING RECORD

INTERVAL	TYPE	COMPANY
0 – 652.0	GRNL	Computalog
0 – 552.8	CBRD	"
564.5 – 652.0	DENL	"
–		
–		
–		

PERF ☐ OPEN HOLE ☒

REMARKS

A-2 Shale at 560.0

539-564 - no samples

INITIAL WATER RECORD

INTERVAL	STAT LEV	TYPE
42 –		FRE
213 – 60		SUL
–		
–		
–		
–		
–		

CORING RECORD

INTERVAL	LOCATION	NO	mm
–			
–			
–			
–			
–			
–			

GEOLOGICAL CONTACTS	TOP	ELEV	THICK
KB / LAKE LEVEL	0.0		
DRIFT / LAKE BOTTOM	1.2		
PORT LAMBTON			
KETTLE POINT	69.0		
HAMILTON	113.0		
MARCELLUS			
DUNDEE	182.7		
COLUMBUS	217.5		
LUCAS	220.0		
AMHERSTBURG	277.0		
SYLVANIA			
BOIS BLANC	321.0		
SPRINGVALE			
ORISKANY			
BASS ISLANDS	338.0		
G SHALE	369.6		
F SHALE	376.0		
F SALT			
E CARBONATE	419.0		
D SALT/EQUIVALENT			
C SHALE	444.7		
B MARKER	455.0		
B EQUIVALENT			
B SALT	461.3		
B ANHYDRITE			
A2 CARBONATE	538.5		
A2 SALT			
A2 ANHYDRITE			
A1 CARBONATE			
A1 SALT			
A1 ANHYDRITE			
GUELPH			
ERAMOSA			
GOAT ISLAND			
GASPORT/WIARTON			
DECEW			
ROCHESTER			
IRONDEQUOIT			
REYNALES/FOSSIL HILL			
THOROLD			
GRIMSBY			
CABOT HEAD			
MANITOULIN			
WHIRLPOOL			
QUEENSTON			
BLUE MOUNTAIN - GEORG BAY			
COLLINGWOOD			
COBOURG			
VERULAM			
KIRKFIELD			
COBOCONK			
GULL RIVER			
SHADOW LAKE			
CAMBRIAN			
PRECAMBRIAN			

GEOLOGY BY T.R. Carter

CTY Lambton TWP Sombra BLK TRAC LOT 7 CON XI

WELL NAME Union Bickford 36 Sombra 7-XI PERMIT 7121 INIT CLASS OBS

OPERATOR Union Gas Ltd TARGET SAL CUR STATUS OBS

DRILLING DATA

CONTRACTOR James Newport Drilling Ltd
RIG TYPE DEPTHS
CABLE TOP 1.2 KB ELEV 185.5
BOT 640.0 LOGGER 640.0
ROTRY TOP DRILLER 640.0
BOT DEEP END
DRLG FLD PLUG BK

DATES

PERMIT 1987-04-02
SPUD 1987-07-27
COMPTD 1987-09-09
OFFCNF 1987-10-09
WRKOVR
ABNDND

COORDINATES

NORTH m
SOUTH 325.0 m
EAST m
WEST 90.0 m
LAT 42 42 49
LONG 82 24 52

SAMPLES

TOP 50
BOT 640
TRAY 9195

INITIAL GAS RECORD

INTERVAL	FLOW	SIP
–		
–		
–		
–		
–		
–		

CASING AND TUBING RECORD

DIAM	WEIGHT	SET AT	HOW SET	RECOV
340	71.4	55.3	SHO	0
273	60.3	183.8	SHO	183.8
219	35.7	390.6	CEM	0
140	20.8	620.2	CEM	0

COMPLETION DATA

GAS $10^3 m^3/d$
OIL m^3/d
SIP kPa
FORM
INTRVL m
m
m

INITIAL OIL RECORD

INTERVAL	FLOW	DENSITY
–		
–		
–		
–		
–		
–		

LOGGING RECORD

INTERVAL	TYPE	COMPANY
0 – 596	CBND	Computalog
0 – 640	GRNL	"
620 – 640	DENL	"
610 – 640	CALP	"
–		
–		
–		

PERF ☐ OPEN HOLE ☒

REMARKS

A-2 Shale at 584.0
Anhydrite at top of A-2 Salt from 590.5 to 594.0

INITIAL WATER RECORD

INTERVAL	STAT LEV	TYPE
202.0 – 205.0	45	SUL
–		
–		
–		
–		
–		

CORING RECORD

INTERVAL	LOCATION	NO	ANAL
–			
–			
–			
–			
–			

GEOLOGICAL CONTACTS	TOP	ELEV	THICK
KB / ~~LAKE LEVEL~~	0.0		
DRIFT / ~~LAKE BOTTOM~~	1.2		
DEVONIAN: PORT LAMBTON			
KETTLE POINT	49.0		
HAMILTON	110.7		
MARCELLUS			
DUNDEE	179.8		
COLUMBUS			
LUCAS	207.0		
AMHERSTBURG	273.0		
SYLVANIA			
BOIS BLANC	318.0		
SPRINGVALE			
ORISKANY			
SILURIAN: BASS ISLANDS	339.0		
G SHALE	373.0		
F SHALE	379.5		
F SALT			
E CARBONATE	423.3		
D SALT/EQUIVALENT			
C SHALE	450.9		
B MARKER	466.0		
B EQUIVALENT			
B SALT	473.0		
B ANHYDRITE			
A2 CARBONATE	551.0		
A2 SALT	590.9		
A2 ANHYDRITE	618.7		
A1 CARBONATE	620.3		
A1 SALT			
A1 ANHYDRITE			
GUELPH			
ERAMOSA			
GOAT ISLAND			
GASPORT/WARTON			
DECEW			
ROCHESTER			
IRONDEQUOIT			
REYNALES/FOSSIL HILL			
THOROLD			
GRIMSBY			
CABOT HEAD			
MANITOULIN			
WHIRLPOOL			
ORDOVICIAN: QUEENSTON			
BLUE MOUNTAIN - GEORG BAY			
COLLINGWOOD			
COBOURG			
VERULAM			
KIRKFIELD			
COBOCONK			
GULL RIVER			
SHADOW LAKE			
CAMBRIAN			
PRECAMBRIAN			

GEOLOGY BY T.R. Carter

CTY Lambton TWP Sombra BLK TRAC 6 LOT 11 CON XII

WELL NAME Hadley-Midway Sombra 6-11-XII PERMIT 7194 INIT CLASS HPW

OPERATOR Midway Petroleum Company TARGET SAL CUR STATUS GS-ABD

DRILLING DATA

CONTRACTOR Rawlings Drilling Company
RIG TYPE Cable DEPTHS
CABLE TOP 1.5 KB ELEV 186.6
BOT 679.1 LOGGER 677.9
ROTRY TOP DRILLER 679.1
BOT DEEP END
DRLG FLD PLUG BK

DATES

PERMIT 1987-10-30
SPUD 1987-11-09
COMPTD 1987-12-17
OFFCNF 1988-12-17
WRKOVR
ABNDND 1988-01-04

COORDINATES

NORTH 454.2 m
SOUTH m
EAST 290.8 m
WEST m
LAT 42 43 13
LONG 82 23 12

SAMPLES

TOP 41.1
BOT 678.8
TRAY 9199

INITIAL GAS RECORD

INTERVAL	FLOW	SIP
645.0 – 647.1		
650.7 – 653.8	2.105	5654
–		
–		
–		
–		

CASING AND TUBING RECORD

DIAM	WEIGHT	SET AT	HOW SET	RECOV
273	60.3	49.3	SHO	49.3
219	35.7	178.2	SHO	168.5
178	29.8	397.5	CEM	311.0

COMPLETION DATA

GAS $10^3 m^3/d$
OIL m^3/d
SIP kPa
FORM
INTRVL m
m
m

INITIAL OIL RECORD

INTERVAL	FLOW	DENSITY
–		
–		
–		
–		
–		
–		

LOGGING RECORD

INTERVAL	TYPE	COMPANY
0.0 – 677.9	GRNL	Computalog
542.5 – 677.3	DENL	"
–		
–		
–		
–		

PERF ☐ OPEN HOLE ☐

REMARKS

A-2 Shale at 582.5
Anhydrite at 591.0 to 593.8

INITIAL WATER RECORD

INTERVAL	STAT LEV	TYPE
208.2 – 211.2	45.7	SUL
–		
–		
–		
–		
–		

CORING RECORD

INTERVAL	LOCATION	NO	ANAL
–			
–			
–			
–			
–			

GEOLOGICAL CONTACTS	TOP	ELEV	THICK
KB / ~~KANEY LEVEL~~	0.0		
DRIFT / ~~BEDROCK TOP~~	1.5		
DEVONIAN: PORT LAMBTON			
KETTLE POINT	44.5		
HAMILTON	110.3		
MARCELLUS			
DUNDEE	178.6		
COLUMBUS			
LUCAS	209.0		
AMHERSTBURG	272.0		
SYLVANIA			
BOIS BLANC	314.0		
SPRINGVALE			
ORISKANY			
SILURIAN: BASS ISLANDS	339.0		
G SHALE	374.9		
F SHALE	381.6		
F SALT			
E CARBONATE	424.9		
D SALT/EQUIVALENT			
C SHALE	454.4		
B MARKER	465.1		
B EQUIVALENT			
B SALT	472.4		
B ANHYDRITE			
A2 CARBONATE	549.9		
A2 SALT	591.0		
A2 ANHYDRITE	610.8		
A1 CARBONATE	611.7		
A1 SALT			
A1 ANHYDRITE	640.7		
GUELPH	643.1		
ERAMOSA			
GOAT ISLAND	658.1		
GASPORT/WARTON	673.9		
DECEW			
ROCHESTER			
IRONDEQUOIT			
REYNALES/FOSSIL HILL			
THOROLD			
GRIMSBY			
CABOT HEAD			
MANITOULIN			
WHIRLPOOL			
ORDOVICIAN: QUEENSTON			
BLUE MOUNTAIN - GEORG BAY			
COLLINGWOOD			
COBOURG			
VERULAM			
KIRKFIELD			
COBOCONK			
GULL RIVER			
SHADOW LAKE			
CAMBRIAN			
PRECAMBRIAN			

GEOLOGY BY T.R. Carter

T.R. Carter

CTY Lambton TWP Warwick BLK TRAC 2-1 LOT 25 CON VI SER

WELL NAME W.H.R. #1 Warwick 2-1-25-VI SER PERMIT 7076 INIT CLASS DEV

OPERATOR W.H.R. Oil Production Ltd TARGET DEV CUR STATUS OS-SUS

DRILLING DATA

CONTRACTOR Eagle Drilling Services Inc.

RIG TYPE Rotary

CABLE TOP / BOT

ROTRY TOP 1.3 / BOT 134.1

DRLG FLD

DEPTHS

KB ELEV 248.3

LOGGER

DRILLER 134.1

DEEP END

PLUG BK

DATES

PERMIT 1986-12-03

SPUD 1987-01-26

COMPTD 1987-01-28

OFFCNF 1987-02-27

WRKOVR

ABNDND

COORDINATES

NORTH 1263.6 m

SOUTH m

EAST m

WEST 226.3 m

LAT 43 56 33.5

LONG 81 49 46

SAMPLES

TOP 45.7

BOT 115.8

TRAY 1964

INITIAL GAS RECORD

INTERVAL	FLOW	SIP
–		
–		
–		
–		
–		
–		

CASING AND TUBING RECORD

DIAM	WEIGHT	SET AT	HOW SET	RECOV
178	25.3	42.7	SHO	42.7
114	14.1	114.8	CEM	

COMPLETION DATA

GAS 10³m³/d

OIL m³/d

SIP kPa

FORM Dundee

INTRVL 115.8-117.3 m

m

m

INITIAL OIL RECORD

INTERVAL	FLOW	DENSITY
115.8 - 117.3		
–		
–		
–		
–		

LOGGING RECORD

INTERVAL	TYPE	COMPANY
–		
–		
–		
–		
–		
–		

PERF ☐ OPEN HOLE ☒

REMARKS

Missing samples

INITIAL WATER RECORD

INTERVAL	STAT LEV	TYPE
–		
–		
–		
–		
–		
–		

CORING RECORD

INTERVAL	LOCATION	NO	mm
–			
–			
–			
–			
–			

GEOLOGICAL CONTACTS	TOP	ELEV	THICK
KB / LAKE LEVEL	0.0		
DRIFT / LAKE BOTTOM	1.3		
DEVONIAN: PORT LAMBTON			
DEVONIAN: KETTLE POINT	35.7		
DEVONIAN: HAMILTON			
DEVONIAN: MARCELLUS			
DEVONIAN: DUNDEE	115.4		
DEVONIAN: COLUMBUS			
DEVONIAN: LUCAS			
DEVONIAN: AMHERSTBURG			
DEVONIAN: SYLVANIA			
DEVONIAN: BOIS BLANC			
DEVONIAN: SPRINGVALE			
DEVONIAN: ORISKANY			
SILURIAN: BASS ISLANDS			
SILURIAN: G SHALE			
SILURIAN: F SHALE			
SILURIAN: F SALT			
SILURIAN: E CARBONATE			
SILURIAN: D SALT/EQUIVALENT			
SILURIAN: C SHALE			
SILURIAN: B MARKER			
SILURIAN: B EQUIVALENT			
SILURIAN: B SALT			
SILURIAN: B ANHYDRITE			
SILURIAN: A2 CARBONATE			
SILURIAN: A2 SALT			
SILURIAN: A2 ANHYDRITE			
SILURIAN: A1 CARBONATE			
SILURIAN: A1 SALT			
SILURIAN: A1 ANHYDRITE			
SILURIAN: GUELPH			
SILURIAN: ERAMOSA			
SILURIAN: GOAT ISLAND			
SILURIAN: GASPORT/WIARTON			
SILURIAN: DECEW			
SILURIAN: ROCHESTER			
SILURIAN: IRONDEQUOIT			
SILURIAN: REYNALES/FOSSIL HILL			
SILURIAN: THOROLD			
SILURIAN: GRIMSBY			
SILURIAN: CABOT HEAD			
SILURIAN: MANITOULIN			
SILURIAN: WHIRLPOOL			
ORDOVICIAN: QUEENSTON			
ORDOVICIAN: BLUE MOUNTAIN - GEORG BAY			
ORDOVICIAN: COLLINGWOOD			
ORDOVICIAN: COBOURG			
ORDOVICIAN: VERULAM			
ORDOVICIAN: KIRKFIELD			
ORDOVICIAN: COBOCONK			
ORDOVICIAN: GULL RIVER			
ORDOVICIAN: SHADOW LAKE			
CAMBRIAN			
PRECAMBRIAN			

GEOLOGY BY T.R. Carter

CTY Lambton TWP Warwick BLK TRAC 3-6 LOT 26 CON VI SER

WELL NAME Chatham Res 8 Warwick 3-6-26-VI SER PERMIT 7085 INIT CLASS DEV

OPERATOR Chatham Resources Limited TARGET DEV CUR STATUS LH-ABD

DRILLING DATA

CONTRACTOR Eagle Drilling Services Inc.

RIG TYPE Rotary

CABLE TOP / BOT

ROTRY TOP 1.0 / BOT 32.6

DRLG FLD

DEPTHS

KB ELEV 242.6

LOGGER

DRILLER 32.6

DEEP END

PLUG BK

DATES

PERMIT 1986-12-10

SPUD 1987-02-12

COMPTD 1987-02-13

OFFCNF

WRKOVR

ABNDND

COORDINATES

NORTH 432.3 m

SOUTH m

EAST 76.2 m

WEST m

LAT

LONG

SAMPLES

TOP

BOT

TRAY

INITIAL GAS RECORD

INTERVAL	FLOW	SIP
–		
–		
–		
–		
–		
–		

CASING AND TUBING RECORD

DIAM	WEIGHT	SET AT	HOW SET	RECOV

COMPLETION DATA

GAS 10³m³/d

OIL m³/d

SIP kPa

FORM

INTRVL m

m

m

INITIAL OIL RECORD

INTERVAL	FLOW	DENSITY
–		
–		
–		
–		
–		

LOGGING RECORD

INTERVAL	TYPE	COMPANY
–		
–		
–		
–		
–		
–		

PERF ☐ OPEN HOLE ☐

REMARKS

No samples

INITIAL WATER RECORD

INTERVAL	STAT LEV	TYPE
–		
–		
–		
–		
–		
–		

CORING RECORD

INTERVAL	LOCATION	NO	mm
–			
–			
–			
–			
–			

GEOLOGICAL CONTACTS	TOP	ELEV	THICK
KB / LAKE LEVEL	0.0		
DRIFT / LAKE BOTTOM	1.0		
DEVONIAN: PORT LAMBTON			
DEVONIAN: KETTLE POINT	32.6		
DEVONIAN: HAMILTON			
DEVONIAN: MARCELLUS			
DEVONIAN: DUNDEE			
DEVONIAN: COLUMBUS			
DEVONIAN: LUCAS			
DEVONIAN: AMHERSTBURG			
DEVONIAN: SYLVANIA			
DEVONIAN: BOIS BLANC			
DEVONIAN: SPRINGVALE			
DEVONIAN: ORISKANY			
SILURIAN: BASS ISLANDS			
SILURIAN: G SHALE			
SILURIAN: F SHALE			
SILURIAN: F SALT			
SILURIAN: E CARBONATE			
SILURIAN: D SALT/EQUIVALENT			
SILURIAN: C SHALE			
SILURIAN: B MARKER			
SILURIAN: B EQUIVALENT			
SILURIAN: B SALT			
SILURIAN: B ANHYDRITE			
SILURIAN: A2 CARBONATE			
SILURIAN: A2 SALT			
SILURIAN: A2 ANHYDRITE			
SILURIAN: A1 CARBONATE			
SILURIAN: A1 SALT			
SILURIAN: A1 ANHYDRITE			
SILURIAN: GUELPH			
SILURIAN: ERAMOSA			
SILURIAN: GOAT ISLAND			
SILURIAN: GASPORT/WIARTON			
SILURIAN: DECEW			
SILURIAN: ROCHESTER			
SILURIAN: IRONDEQUOIT			
SILURIAN: REYNALES/FOSSIL HILL			
SILURIAN: THOROLD			
SILURIAN: GRIMSBY			
SILURIAN: CABOT HEAD			
SILURIAN: MANITOULIN			
SILURIAN: WHIRLPOOL			
ORDOVICIAN: QUEENSTON			
ORDOVICIAN: BLUE MOUNTAIN - GEORG BAY			
ORDOVICIAN: COLLINGWOOD			
ORDOVICIAN: COBOURG			
ORDOVICIAN: VERULAM			
ORDOVICIAN: KIRKFIELD			
ORDOVICIAN: COBOCONK			
ORDOVICIAN: GULL RIVER			
ORDOVICIAN: SHADOW LAKE			
CAMBRIAN			
PRECAMBRIAN			

GEOLOGY BY T.R. Carter

CTY Lambton TWP Warwick BLK TRAC 3-6 LOT 26 CON VI SER

WELL NAME Chatham Res 8 Warwick 3-6-26-VI SER PERMIT 7085A INIT CLASS DEV

OPERATOR Chatham Resources Ltd TARGET DEV CUR STATUS OP-GS

DRILLING DATA

CONTRACTOR Eagle Drilling Services Inc.

RIG TYPE Rotary

CABLE TOP / BOT

ROTRY TOP 1.0 / BOT 138.0

DRLG FLD

DEPTHS: KB ELEV 242.6; LOGGER 136.9; DRILLER 138.0; DEEP END; PLUG BK 126.5

DATES

PERMIT 1986-12-10

SPUD 1987-02-13

COMPTD 1987-02-18

OFFCNF 1987-02-16

WRKOVR

ABNOND

COORDINATES

NORTH 426.1 m

SOUTH m

EAST 74.3 m

WEST m

LAT 42 56 05

LONG 81 49 35

SAMPLES

TOP 33.2

BOT 137.2

TRAY 7152

INITIAL GAS RECORD

INTERVAL	FLOW	SIP
115.2 –	Show	

INITIAL OIL RECORD

INTERVAL	FLOW	DENSITY
122.8 – 125.9	Show	
133.2 – 135.0	0.95	

INITIAL WATER RECORD

INTERVAL	STAT LEV	TYPE

CASING AND TUBING RECORD

DIAM	WEIGHT	SET AT	HOW SET	RECOV
178	25.3	45	CEM	0
114		116	PAC	0

LOGGING RECORD

INTERVAL	TYPE	COMPANY
0.0 – 136.9	GRNL	Computalog
106.7 – 136.9	DENL	"

CORING RECORD

INTERVAL	LOCATION	NO	mm

COMPLETION DATA

GAS 10 ^{3}m^3/d

OIL m^3/d

SIP kPa

FORM Dundee

INTRVL m / m / m

PERF ☐ OPEN HOLE ☒

REMARKS

GEOLOGICAL CONTACTS	TOP	ELEV	THICK
KB /LAKE LEVEL	0.0		
DRIFT /LAKE BOTTOM	1.0		
DEVONIAN: PORT LAMBTON			
KETTLE POINT	32.6		
HAMILTON	35.4		
MARCELLUS			
DUNDEE	113.7		
COLUMBUS			
LUCAS			
AMHERSTBURG			
SYLVANIA			
BOIS BLANC			
SPRINGVALE			
ORISKANY			
SILURIAN: BASS ISLANDS			
G SHALE			
F SHALE			
F SALT			
E CARBONATE			
D SALT/EQUIVALENT			
C SHALE			
B MARKER			
B EQUIVALENT			
B SALT			
B ANHYDRITE			
A2 CARBONATE			
A2 SALT			
SILURIAN: A2 ANHYDRITE			
A1 CARBONATE			
A1 SALT			
A1 ANHYDRITE			
GUELPH			
ERAMOSA			
GOAT ISLAND			
GASPORT/WARTON			
DECEW			
ROCHESTER			
IRONDEQUOIT			
REYNALES/FOSSIL HILL			
THOROLD			
GRIMSBY			
CABOT HEAD			
MANITOULIN			
WHIRLPOOL			
ORDOVICIAN: QUEENSTON			
BLUE MOUNTAIN GEORG BAY			
COLLINGWOOD			
COBOURG			
VERULAM			
KIRKFIELD			
COBOCONK			
GULL RIVER			
SHADOW LAKE			
CAMBRIAN			
PRECAMBRIAN			

GEOLOGY BY T.R. Carter

CTY Lambton TWP Warwick BLK TRAC 1-6 LOT 26 CON VI SER

WELL NAME Chatham Res 7 Warwick 1-6-26-VI SER PERMIT 7092 INIT CLASS DEV

OPERATOR Chatham Resources Ltd TARGET DEV CUR STATUS OP-GS

DRILLING DATA

CONTRACTOR Eagle Drilling Services Inc.

RIG TYPE Rotary

CABLE TOP / BOT

ROTRY TOP 0.9 / BOT 135.0

DRLG FLD

DEPTHS: KB ELEV 242.0; LOGGER 134.1; DRILLER 135.0; DEEP END; PLUG BK

DATES

PERMIT 1986-12-10

SPUD 1987-02-04

COMPTD 1987-02-10

OFFCNF 1987-03-08

WRKOVR

ABNOND

COORDINATES

NORTH 600.7 m

SOUTH m

EAST 240.7 m

WEST m

LAT 42 56 12

LONG 81 49 27

SAMPLES

TOP 31.4

BOT 134.1

TRAY 7113

INITIAL GAS RECORD

INTERVAL	FLOW	SIP
131.4 –	Show	

INITIAL OIL RECORD

INTERVAL	FLOW	DENSITY
131.4 – 135.0	4.77	

INITIAL WATER RECORD

INTERVAL	STAT LEV	TYPE
67.1 –	FRE	

CASING AND TUBING RECORD

DIAM	WEIGHT	SET AT	HOW SET	RECOV
178	25.3	38.1	CEM	0
114		113.7	CEM	0

LOGGING RECORD

INTERVAL	TYPE	COMPANY
0.0 – 133.5	GRNL	Computalog
106.7 – 133.5	DENL	"

CORING RECORD

INTERVAL	LOCATION	NO	mm

COMPLETION DATA

GAS 10 ^{3}m^3/d

OIL m^3/d

SIP kPa

FORM Dundee

INTRVL m / m / m

PERF ☐ OPEN HOLE ☒

REMARKS

GEOLOGICAL CONTACTS	TOP	ELEV	THICK
KB /LAKE LEVEL	0.0		
DRIFT /LAKE BOTTOM	0.9		
DEVONIAN: PORT LAMBTON			
KETTLE POINT	30.2		
HAMILTON	32.6		
MARCELLUS			
DUNDEE	113.4		
COLUMBUS			
LUCAS			
AMHERSTBURG			
SYLVANIA			
BOIS BLANC			
SPRINGVALE			
ORISKANY			
SILURIAN: BASS ISLANDS			
G SHALE			
F SHALE			
F SALT			
E CARBONATE			
D SALT/EQUIVALENT			
C SHALE			
B MARKER			
B EQUIVALENT			
B SALT			
B ANHYDRITE			
A2 CARBONATE			
A2 SALT			
SILURIAN: A2 ANHYDRITE			
A1 CARBONATE			
A1 SALT			
A1 ANHYDRITE			
GUELPH			
ERAMOSA			
GOAT ISLAND			
GASPORT/WARTON			
DECEW			
ROCHESTER			
IRONDEQUOIT			
REYNALES/FOSSIL HILL			
THOROLD			
GRIMSBY			
CABOT HEAD			
MANITOULIN			
WHIRLPOOL			
ORDOVICIAN: QUEENSTON			
BLUE MOUNTAIN - GEORG BAY			
COLLINGWOOD			
COBOURG			
VERULAM			
KIRKFIELD			
COBOCONK			
GULL RIVER			
SHADOW LAKE			
CAMBRIAN			
PRECAMBRIAN			

GEOLOGY BY T.R. Carter

T.R. Carter

CTY Lambton TWP Warwick BLK TRAC 1-7 LOT 26 CON VI SER

WELL NAME Chatham Res 9 Warwick 1-7-26-VI SER PERMIT 7086 INIT CLASS DEV

OPERATOR Chatham Resources Ltd TARGET DEV CUR STATUS OP-GS

DRILLING DATA				DATES		COORDINATES			SAMPLES	
CONTRACTOR	Eagle Drilling Services			PERMIT	1986-12-10	NORTH	263.8	m	TOP	39.0
RIG TYPE	Rotary	DEPTHS		SPUD	1987-02-20	SOUTH		m	BOT	131.1
CABLE TOP		KB ELEV	237.8	COMPTD	1987-02-21	EAST	240.8	m	TRAY	7113
BOT		LOGGER	130.8	OFFCNF	1987-03-19	WEST		m		
ROTARY TOP	0.9	DRILLER	132.0	WRKOVR		LAT	42 56 00			
BOT	132.0	DEEP END		ABNDND		LONG	81 49 27			
DRLG FLD		PLUG BK								

INITIAL GAS RECORD

INTERVAL	FLOW	SIP
109.7 – 111.3	Show	
128.9 – 130.8	Show	
–		
–		
–		
–		

CASING AND TUBING RECORD

DIAM	WEIGHT	SET AT	HOW SET	RECOV
178	25.3	37.8	PAC	0
114		107.0	CEM	0

COMPLETION DATA

GAS 10³m³/d

OIL m³/d

SIP kPa

FORM Dundee

INTRVL m

m

m

INITIAL OIL RECORD

INTERVAL	FLOW	DENSITY
109.7 – 111.3	Show	
–		
–		
–		
–		
–		

LOGGING RECORD

INTERVAL	TYPE	COMPANY
0.0 – 130.8	GRNL	Computalog
85.3 – 130.8	DENL	"
–		
–		
–		
–		
–		

PERF ☐ OPEN HOLE ☐

REMARKS

INITIAL WATER RECORD

INTERVAL	STAT LEV	TYPE
–		
–		
–		
–		
–		
–		

CORING RECORD

INTERVAL	LOCATION	NO	ave.
–			
–			
–			
–			
–			
–			

GEOLOGICAL CONTACTS		TOP	ELEV	THICK
	KB / LAKE LEVEL	0.0		
	DRIFT / LAKE BOTTOM	0.9		
DEVONIAN	PORT LAMBTON			
	KETTLE POINT	25.9		
	HAMILTON	27.7		
	MARCELLUS			
	DUNDEE	108.5		
	COLUMBUS			
	LUCAS			
	AMHERSTBURG			
	SYLVANIA			
	BOIS BLANC			
	SPRINGVALE			
	ORISKANY			
SILURIAN	BASS ISLANDS			
	G SHALE			
	F SHALE			
	F SALT			
	E CARBONATE			
	D SALT/EQUIVALENT			
	C SHALE			
	B MARKER			
	B EQUIVALENT			
	B SALT			
	B ANHYDRITE			
	A2 CARBONATE			
	A2 SALT			
SILURIAN	A2 ANHYDRITE			
	A1 CARBONATE			
	A1 SALT			
	A1 ANHYDRITE			
	GUELPH			
	ERAMOSA			
	GOAT ISLAND			
	GASPORT/WIARTON			
	DECEW			
	ROCHESTER			
	IRONDEQUOIT			
	REYNALES/FOSSIL HILL			
	THOROLD			
	GRIMSBY			
	CABOT HEAD			
	MANITOULIN			
	WHIRLPOOL			
ORDOVICIAN	QUEENSTON			
	BLUE MOUNTAIN GEORG BAY			
	COLLINGWOOD			
	COBOURG			
	VERULAM			
	KIRKFIELD			
	COBOCONK			
	GULL RIVER			
	SHADOW LAKE			
CAMBRIAN				
PRECAMBRIAN				

GEOLOGY BY T.R. Carter

CTY Lambton TWP Warwick BLK TRAC 3-2 LOT 26 CON VI SER

WELL NAME Chatham Res 6 Warwick 3-2-26-VI SER PERMIT 7083 INIT CLASS DEV

OPERATOR Chatham Resources Ltd TARGET DEV CUR STATUS OS-GS-RD

DRILLING DATA				DATES		COORDINATES			SAMPLES	
CONTRACTOR	Eagle Drilling Services			PERMIT	1986-12-10	NORTH	1087.9	m	TOP	48.2
RIG TYPE	Rotary	DEPTHS		SPUD	1987-01-18	SOUTH		m	BOT	246.9
CABLE TOP		KB ELEV	246.6	COMPTD	1987-01-21*	EAST	76.2	m	TRAY	7114
BOT		LOGGER		OFFCNF	1987-02-20	WEST		m		
ROTARY TOP	0.9	DRILLER	247.0	WRKOVR		LAT	42 56 28			
BOT	247.0	DEEP END		ABNDND		LONG	81 49 34			
DRLG FLD	247	PLUG BK								

INITIAL GAS RECORD

INTERVAL	FLOW	SIP
130.5 –		
–		
–		
–		
–		
–		

CASING AND TUBING RECORD

DIAM	WEIGHT	SET AT	HOW SET	RECOV
177.8	25.3	47.0	CEM	0
114	14.1	141.7	CEM+BHP	0
60		140.2	CEM	0

COMPLETION DATA

GAS 10³m³/d

OIL m³/d

SIP kPa

FORM

INTRVL m

m

m

INITIAL OIL RECORD

INTERVAL	FLOW	DENSITY
130.5 –		
–		
–		
–		
–		
–		

LOGGING RECORD

INTERVAL	TYPE	COMPANY
0.0 – 134	GRL	Computalog
0.0 – 134	NEUT	"
91.4 – 134	DENL	"
–		
–		
–		
–		

PERF ☐ OPEN HOLE ☐

REMARKS

*

Deepened to 234.7 m. Oct.14 to Nov.5, 1987

Deepened to 247 m on Jan. 28, 1988 and completed as brine dis. under permit 7232.

INITIAL WATER RECORD

INTERVAL	STAT LEV	TYPE
99.1 –		FRE
–		
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–		

CORING RECORD

INTERVAL	LOCATION	NO	ave.
–			
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–			
–			
–			
–			

GEOLOGICAL CONTACTS		TOP	ELEV	THICK
	KB / LAKE LEVEL	0.0		
	DRIFT / LAKE BOTTOM	0.9		
DEVONIAN	PORT LAMBTON			
	KETTLE POINT	35.1		
	HAMILTON	36.6		
	MARCELLUS			
	DUNDEE	114.0		
	COLUMBUS			
	LUCAS			
	AMHERSTBURG			
	SYLVANIA			
	BOIS BLANC			
	SPRINGVALE			
	ORISKANY			
SILURIAN	BASS ISLANDS			
	G SHALE			
	F SHALE			
	F SALT			
	E CARBONATE			
	D SALT/EQUIVALENT			
	C SHALE			
	B MARKER			
	B EQUIVALENT			
	B SALT			
	B ANHYDRITE			
	A2 CARBONATE			
	A2 SALT			
SILURIAN	A2 ANHYDRITE			
	A1 CARBONATE			
	A1 SALT			
	A1 ANHYDRITE			
	GUELPH			
	ERAMOSA			
	GOAT ISLAND			
	GASPORT/WIARTON			
	DECEW			
	ROCHESTER			
	IRONDEQUOIT			
	REYNALES/FOSSIL HILL			
	THOROLD			
	GRIMSBY			
	CABOT HEAD			
	MANITOULIN			
	WHIRLPOOL			
ORDOVICIAN	QUEENSTON			
	BLUE MOUNTAIN GEORG BAY			
	COLLINGWOOD			
	COBOURG			
	VERULAM			
	KIRKFIELD			
	COBOCONK			
	GULL RIVER			
	SHADOW LAKE			
CAMBRIAN				
PRECAMBRIAN				

GEOLOGY BY T.R. Carter

CTY Lambton TWP Warwick BLK TRAC 4-2 LOT 26 CON VI SER

WELL NAME Chatham Res 5 Warwick 4-2-26-VI SER PERMIT 7093 INIT CLASS DEV

OPERATOR Chatham Resources Ltd TARGET DEV CUR STATUS OP-GS

DRILLING DATA

CONTRACTOR Eagle Drilling Services
RIG TYPE Rotary
CABLE TOP — DEPTHS
BOT — KB ELEV 247.2
ROTRY TOP 1.0 LOGGER
BOT 132.6 DRILLER 132.6
DRLG FLD DEEP END
PLUG BK

DATES

PERMIT 1986-12-10
SPUD 1987-01-05
COMPTD 1987-01-17
OFFCNF
WRKOVR
ABNDND

COORDINATES

NORTH 1089.1 m
SOUTH m
EAST 240.7 m
WEST m
LAT 42 56 28
LONG 81 49 28

SAMPLES

TOP 35.4
BOT 132.6
TRAY 2152

INITIAL GAS RECORD

INTERVAL	FLOW	SIP
109.7 –	Show	
128.0 –	Show	

CASING AND TUBING RECORD

DIAM	WEIGHT	SET AT	HOW SET	RECOV
177.8	25.3	39.3	CEM	0
114.3	14.1	116.4	CEM	0

COMPLETION DATA

GAS 10³m³/d
OIL m³/d
SIP kPa
FORM Dundee
INTRVL m

INITIAL OIL RECORD

INTERVAL	FLOW	DENSITY
128.0 –	6.2m³/d	

LOGGING RECORD

INTERVAL	TYPE	COMPANY
0.0 – 130.8	GRNL	Computalog
115.5 – 130.8	DENL	"

PERF ☐ OPEN HOLE ☒

REMARKS

INITIAL WATER RECORD

INTERVAL	STAT LEV	TYPE
45.7 –		FRE
88.4 –		

CORING RECORD

INTERVAL	LOCATION	NO	AMT

GEOLOGICAL CONTACTS

		TOP	ELEV	THICK
	KB/LAKE SEWEX	0.0		
	DRIFT/LAKE BRITTAN	1.0		
DEVONIAN	PORT LAMBTON			
	KETTLE POINT	35.4		
	HAMILTON	36.9		
	MARCELLUS			
	DUNDEE	115.2		
	COLUMBUS			
	LUCAS			
	AMHERSTBURG			
	SYLVANIA			
	BOIS BLANC			
	SPRINGVALE			
	ORISKANY			
SILURIAN	BASS ISLANDS			
	G SHALE			
	F SHALE			
	F SALT			
	E CARBONATE			
	D SALT/EQUIVALENT			
	C SHALE			
	B MARKER			
	B EQUIVALENT			
	B SALT			
	B ANHYDRITE			
	A2 CARBONATE			
	A2 SALT			
SILURIAN	A2 ANHYDRITE			
	A1 CARBONATE			
	A1 SALT			
	A1 ANHYDRITE			
	GUELPH			
	ERAMOSA			
	GOAT ISLAND			
	GASPORT/WIARTON			
	DECEW			
	ROCHESTER			
	IRONDEQUOIT			
	REYNALES/FOSSIL HILL			
	THOROLD			
	GRIMSBY			
	CABOT HEAD			
	MANITOULIN			
	WHIRLPOOL			
ORDOVICIAN	QUEENSTON			
	BLUE MOUNTAIN - GEORG BAY			
	COLLINGWOOD			
	COBOURG			
	VERULAM			
	KIRKFIELD			
	COBOCONK			
	GULL RIVER			
	SHADOW LAKE			
CAMBRIAN				
PRECAMBRIAN				

GEOLOGY BY T.R. Carter

CTY Lambton TWP Warwick BLK TRAC 2-3 LOT 28 CON IV SER

WELL NAME Vireo Warwick 2-3-28-IV SER PERMIT 7110 INIT CLASS DEV

OPERATOR Wallace B. Lang TARGET DEV CUR STATUS OS-ABD

DRILLING DATA

CONTRACTOR H. Bender
RIG TYPE Cable
CABLE TOP 1.0 DEPTHS
BOT 182.9 KB ELEV 246.6
ROTRY TOP LOGGER
BOT DRILLER 182.9
DRLG FLD DEEP END
PLUG BK

DATES

PERMIT 1987-02-23
SPUD 1987-02-26
COMPTD 1987-04-11
OFFCNF 1987-05-10
WRKOVR
ABNDND 1987-09-03

COORDINATES

NORTH m
SOUTH 396.5 m
EAST 61.3 m
WEST m
LAT 42 57 51.5
LONG 81 48 40

SAMPLES

TOP 39.6
BOT 181.4
TRAY 7572

INITIAL GAS RECORD

INTERVAL	FLOW	SIP
–		
–		
–		
–		
–		
–		

CASING AND TUBING RECORD

DIAM	WEIGHT	SET AT	HOW SET	RECOV
219		40.8	SHO	36.5
140		146.3	PAC	137.2

COMPLETION DATA

GAS 10³m³/d
OIL m³/d
SIP kPa
FORM
INTRVL m

INITIAL OIL RECORD

INTERVAL	FLOW	DENSITY
155.5 – 157.0	Show	

LOGGING RECORD

INTERVAL	TYPE	COMPANY
–		

PERF ☐ OPEN HOLE ☐

REMARKS

INITIAL WATER RECORD

INTERVAL	STAT LEV	TYPE
8.5 –	4.5	FRE
39.0 –		SUL
149.3 –		SUL

CORING RECORD

INTERVAL	LOCATION	NO	AMT

GEOLOGICAL CONTACTS

		TOP	ELEV	THICK
	KB/LAKE KETTLE	0.0		
	DRIFT/LAKE BRITTAN	1.0		
DEVONIAN	PORT LAMBTON			
	KETTLE POINT	40.2		
	HAMILTON	40.8		
	MARCELLUS			
	DUNDEE	114.5		
	COLUMBUS			
	LUCAS			
	AMHERSTBURG			
	SYLVANIA			
	BOIS BLANC			
	SPRINGVALE			
	ORISKANY			
SILURIAN	BASS ISLANDS			
	G SHALE			
	F SHALE			
	F SALT			
	E CARBONATE			
	D SALT/EQUIVALENT			
	C SHALE			
	B MARKER			
	B EQUIVALENT			
	B SALT			
	B ANHYDRITE			
	A2 CARBONATE			
	A2 SALT			
SILURIAN	A2 ANHYDRITE			
	A1 CARBONATE			
	A1 SALT			
	A1 ANHYDRITE			
	GUELPH			
	ERAMOSA			
	GOAT ISLAND			
	GASPORT/WIARTON			
	DECEW			
	ROCHESTER			
	IRONDEQUOIT			
	REYNALES/FOSSIL HILL			
	THOROLD			
	GRIMSBY			
	CABOT HEAD			
	MANITOULIN			
	WHIRLPOOL			
ORDOVICIAN	QUEENSTON			
	BLUE MOUNTAIN - GEORG BAY			
	COLLINGWOOD			
	COBOURG			
	VERULAM			
	KIRKFIELD			
	COBOCONK			
	GULL RIVER			
	SHADOW LAKE			
CAMBRIAN				
PRECAMBRIAN				

GEOLOGY BY T.R. Carter

T.R. Carter

CTY Manitoulin TWP Sandfield BLK TRAC 4 LOT 8 CON V

WELL NAME TLX Lee No. 2 Sandfield 4-8-V PERMIT 7108 INIT CLASS NPW

OPERATOR 676577 Ontario Limited TARGET ORD CUR STATUS OSGS-BP

DRILLING DATA

CONTRACTOR John Wrights/Charles Stevenson
RIG TYPE Rotary
CABLE TOP
BOT
ROTRY TOP 0.0
BOT 252.6
DRLG FLD

DEPTHS
KB ELEV
LOGGER
DRILLER 252.6
DEEP END
PLUG BK

DATES

PERMIT 1987-01-06
SPUD 1987-03-30
COMPTD 1987-04-03
OFFCNF 1988-04-03
WRKOVR
ABNDND

COORDINATES

NORTH 140.2 m
SOUTH m
EAST m
WEST 140.2 m
LAT
LONG

SAMPLES

TOP 0
BOT 251.5
TRAY 7139

INITIAL GAS RECORD

INTERVAL	FLOW	SIP
245.4 – 246.9		

INITIAL OIL RECORD

INTERVAL	FLOW	DENSITY
245.4 – 246.9		

INITIAL WATER RECORD

INTERVAL	STAT LEV	TYPE
61.0		FRE
249.9	190.5	SAL

CASING AND TUBING RECORD

DIAM	WEIGHT	SET AT	HOW SET	RECOV
219		70.1	CEM	0

LOGGING RECORD

INTERVAL	TYPE	COMPANY
–		

CORING RECORD

INTERVAL	LOCATION	NO	mm
–			

COMPLETION DATA

GAS 10 ³m³/d
OIL m³/d
SIP kPa
FORM
INTRVL m
m
m

PERF ☐ OPEN HOLE ☐

REMARKS

No elevations reported

GEOLOGICAL CONTACTS	TOP	ELEV	THICK
KB / [illegible]	0.0		
DRIFT / [illegible]	0.0		
DEVONIAN: PORT LAMBTON			
KETTLE POINT			
HAMILTON			
MARCELLUS			
DUNDEE			
COLUMBUS			
LUCAS			
AMHERSTBURG			
SYLVANIA			
BOIS BLANC			
SPRINGVALE			
ORISKANY			
SILURIAN: BASS ISLANDS			
G SHALE			
F SHALE			
F SALT			
E CARBONATE			
D SALT/EQUIVALENT			
C SHALE			
B MARKER			
B EQUIVALENT			
B SALT			
B ANHYDRITE			
A2 CARBONATE			
A2 SALT			
A2 ANHYDRITE			
A1 CARBONATE			
A1 SALT			
A1 ANHYDRITE			
GUELPH			
ERAMOSA			
GOAT ISLAND			
GASPORT/WIARTON			
DECEW			
ROCHESTER			
IRONDEQUOIT			
[illegible]/FOSSIL HILL	0.0		
[illegible] St. Edmund	21.3		
[illegible] Wingfield	36.0		
[illegible] Dyer Bay	42.7		
[illegible] Cabot Head	50.5		
[illegible] Manitoulin	73.2		
ORDOVICIAN: QUEENSTON			
BLUE MOUNTAIN - GEORG BAY	82.3		
COLLINGWOOD	224.5		
COBOURG	231.7		
VERULAM			
KIRKFIELD			
COBOCONK			
GULL RIVER			
SHADOW LAKE			
CAMBRIAN			
PRECAMBRIAN			

GEOLOGY BY T.R. Carter

CTY Middlesex TWP McGillivray BLK TRAC 4 LOT 5 CON XIX

WELL NAME Forbes 43 McGillivray 4-5-XIX PERMIT 7113 INIT CLASS NPW

OPERATOR Forbes Resources Inc. TARGET SAL CUR STATUS DH-ABD

DRILLING DATA

CONTRACTOR Newport Drilling Ltd
RIG TYPE Cable
CABLE TOP 0.2
BOT 567.0
ROTRY TOP
BOT
DRLG FLD

DEPTHS
KB ELEV 215.1
LOGGER
DRILLER 567.0
DEEP END
PLUG BK

DATES

PERMIT 1987-03-09
SPUD 1987-03-12
COMPTD 1987-04-16
OFFCNF 1988-04-16
WRKOVR
ABNDND 1987-04-22

COORDINATES

NORTH 295.2 m
SOUTH m
EAST 151.9 m
WEST m
LAT 43 14 05
LONG 81 38 53

SAMPLES

TOP 33
BOT 564
TRAY 9725

INITIAL GAS RECORD

INTERVAL	FLOW	SIP
–		
–		
–		
–		
–		
–		

INITIAL OIL RECORD

INTERVAL	FLOW	DENSITY
–		
–		
–		
–		
–		
–		

INITIAL WATER RECORD

INTERVAL	STAT LEV	TYPE
46 – 48		SUL
564 –		SAL
–		
–		
–		
–		

CASING AND TUBING RECORD

DIAM	WEIGHT	SET AT	HOW SET	RECOV
273	59.5	33.5	SHO	33.5
177.8	35.7	269.9	CEM	227

LOGGING RECORD

INTERVAL	TYPE	COMPANY
–		

CORING RECORD

INTERVAL	LOCATION	NO	mm
–			

COMPLETION DATA

GAS 10 ³m³/d
OIL m³/d
SIP kPa
FORM
INTRVL m
m
m

PERF ☐ OPEN HOLE ☐

REMARKS

No samples 50-66m

Anhydrite 428-429

A-2 Shale at 447m

GEOLOGICAL CONTACTS	TOP	ELEV	THICK
KB / [illegible]	0.0		
DRIFT / [illegible]	0.2		
DEVONIAN: PORT LAMBTON			
KETTLE POINT			
HAMILTON			
MARCELLUS			
DUNDEE	36.0		
COLUMBUS			
LUCAS	66.0		
AMHERSTBURG	137.0		
SYLVANIA			
BOIS BLANC	191.0		
SPRINGVALE			
ORISKANY			
SILURIAN: BASS ISLANDS	221.0		
G SHALE	256.0		
F SHALE	262.0		
F SALT			
E CARBONATE	301.0		
D SALT/EQUIVALENT	327.0		
C SHALE	330.0		
B MARKER	345.0		
B EQUIVALENT			
B SALT	351.0		
B ANHYDRITE			
A2 CARBONATE	419.0		
A2 SALT			
A2 ANHYDRITE	457.0		
A1 CARBONATE			
A1 SALT			
A1 ANHYDRITE			
GUELPH	463.0		
ERAMOSA			
GOAT ISLAND			
GASPORT/WIARTON			
DECEW			
ROCHESTER			
IRONDEQUOIT			
REYNALES/FOSSIL HILL			
THOROLD			
GRIMSBY			
CABOT HEAD			
MANITOULIN			
WHIRLPOOL			
ORDOVICIAN: QUEENSTON			
BLUE MOUNTAIN - GEORG BAY			
COLLINGWOOD			
COBOURG			
VERULAM			
KIRKFIELD			
COBOCONK			
GULL RIVER			
SHADOW LAKE			
CAMBRIAN			
PRECAMBRIAN			

GEOLOGY BY T.R. Carter

CTY Middlesex TWP Metcalfe BLK TRAC 4-4 LOT 3 CON VI

WELL NAME Smith 1, Metcalfe 4-4-3-VI PERMIT 7149 INIT CLASS NPW

OPERATOR Ron Smith Well Drilling Ltd TARGET DEV CUR STATUS DH-ABD

DRILLING DATA

CONTRACTOR Ron Smith Well Drilling Ltd
RIG TYPE Cable
CABLE TOP 0.0
BOT 143.3
ROTRY TOP
BOT
DRLG FLD

DEPTHS
KB ELEV 224.3
LOGGER
DRILLER 143.3
DEEP END
PLUG BK

DATES

PERMIT 1987-06-23
SPUD 1987-06-24
COMPTD 1987-07-02
OFFCNF 1988-07-02
WRKOVR
ABNOND 1987-07-13

COORDINATES

NORTH m
SOUTH 607.7 m
EAST m
WEST 69.3 m
LAT 42 52 37
LONG 81 46 05

SAMPLES

TOP 25.9
BOT 143.6
TRAY 7823

INITIAL GAS RECORD

INTERVAL	FLOW	SIP
–		

INITIAL OIL RECORD

INTERVAL	FLOW	DENSITY
–		

INITIAL WATER RECORD

INTERVAL	STAT LEV	TYPE
143 –	113	SUL

CASING AND TUBING RECORD

DIAM	WEIGHT	SET AT	HOW SET	RECOV
178	7.7	30.4	SHO	20.7

LOGGING RECORD

INTERVAL	TYPE	COMPANY
–		

CORING RECORD

INTERVAL	LOCATION	NO	mm
–			

COMPLETION DATA

GAS 10³m³/d
OIL m³/d
SIP kPa
FORM
INTRVL m
m
m
PERF ☐ OPEN HOLE ☐

REMARKS

Top of bedrock not reported by operator - estimated from samples

GEOLOGICAL CONTACTS	TOP	ELEV	THICK
KB / LAKE LEVEL			
DRIFT / LAKE BOTTOM	0.0		
DEVONIAN: PORT LAMBTON			
KETTLE POINT	25.9		
HAMILTON	33.0		
MARCELLUS			
DUNDEE	106.7		
COLUMBUS			
LUCAS	136.5		
AMHERSTBURG			
SYLVANIA			
BOIS BLANC			
SPRINGVALE			
ORISKANY			
SILURIAN: BASS ISLANDS			
G SHALE			
F SHALE			
F SALT			
E CARBONATE			
D SALT/EQUIVALENT			
C SHALE			
B MARKER			
B EQUIVALENT			
B SALT			
B ANHYDRITE			
A2 CARBONATE			
A2 SALT			
SILURIAN: A2 ANHYDRITE			
A1 CARBONATE			
A1 SALT			
A1 ANHYDRITE			
GUELPH			
ERAMOSA			
GOAT ISLAND			
GASPORT/WIARTON			
DECEW			
ROCHESTER			
IRONDEQUOIT			
REYNALES/FOSSIL HILL			
THOROLD			
GRIMSBY			
CABOT HEAD			
MANITOULIN			
WHIRLPOOL			
ORDOVICIAN: QUEENSTON			
BLUE MOUNTAIN - GEORG BAY			
COLLINGWOOD			
COBOURG			
VERULAM			
KIRKFIELD			
COBOCONK			
GULL RIVER			
SHADOW LAKE			
CAMBRIAN			
PRECAMBRIAN			

GEOLOGY BY T.R. Carter

CTY Norfolk TWP Charlotteville BLK TRAC 1 LOT 3 CON VII

WELL NAME Bayview 15 Charlotteville 1-3-VII PERMIT 7167 INIT CLASS DEV

OPERATOR Bayview Explorations Ltd TARGET CLI CUR STATUS G.P.

DRILLING DATA

CONTRACTOR Murray Rose Drilling Inc.
RIG TYPE Cable
CABLE TOP 1.0
BOT 371.8
ROTRY TOP
BOT
DRLG FLD

DEPTHS
KB ELEV 226.9
LOGGER
DRILLER 371.8
DEEP END
PLUG BK

DATES

PERMIT 1987-07-29
SPUD 1987-08-11
COMPTD 1987-10-01
OFFCNF 1987-10-31
WRKOVR
ABNOND

COORDINATES

NORTH m
SOUTH 134.1 m
EAST m
WEST 101.7 m
LAT 42 45 33
LONG 80 27 53

SAMPLES

TOP
BOT
TRAY

INITIAL GAS RECORD

INTERVAL	FLOW	SIP
368.2 – 371.9	0.085	2068

INITIAL OIL RECORD

INTERVAL	FLOW	DENSITY
–		

INITIAL WATER RECORD

INTERVAL	STAT LEV	TYPE
–		

CASING AND TUBING RECORD

DIAM	WEIGHT	SET AT	HOW SET	RECOV
178	29.8	95.1	CEM	0
114	14.1	368.2	CEM	0

LOGGING RECORD

INTERVAL	TYPE	COMPANY
–		

CORING RECORD

INTERVAL	LOCATION	NO	mm
–			

COMPLETION DATA

GAS 1.70 10³m³/d
OIL m³/d
SIP 2654 kPa
FORM Grimsby
INTRVL 368.2-371.9 m
m
m
PERF ☐ OPEN HOLE ☐

REMARKS

No samples
Re-entry of abandoned gas well

GEOLOGICAL CONTACTS	TOP	ELEV	THICK
KB / [illegible]	1.0		
DRIFT / LAKE BOTTOM			
DEVONIAN: PORT LAMBTON			
KETTLE POINT			
HAMILTON			
MARCELLUS			
DUNDEE	58.5		
COLUMBUS			
LUCAS			
AMHERSTBURG			
SYLVANIA			
BOIS BLANC	99.7		
SPRINGVALE			
ORISKANY			
SILURIAN: BASS ISLANDS	145.7		
G SHALE			
F SHALE			
F SALT			
E CARBONATE			
D SALT/EQUIVALENT			
C SHALE			
B MARKER			
B EQUIVALENT			
B SALT			
B ANHYDRITE			
A2 CARBONATE			
A2 SALT			
SILURIAN: A2 ANHYDRITE			
A1 CARBONATE			
A1 SALT			
A1 ANHYDRITE			
GUELPH	278.9		
ERAMOSA			
GOAT ISLAND			
GASPORT/WIARTON			
DECEW			
ROCHESTER	345.0		
IRONDEQUOIT	364.2		
REYNALES/FOSSIL HILL			
THOROLD			
GRIMSBY	372.8		
CABOT HEAD			
MANITOULIN			
WHIRLPOOL			
ORDOVICIAN: QUEENSTON			
BLUE MOUNTAIN GEORG BAY			
COLLINGWOOD			
COBOURG			
VERULAM			
KIRKFIELD			
COBOCONK			
GULL RIVER			
SHADOW LAKE			
CAMBRIAN			
PRECAMBRIAN			

GEOLOGY BY Well Card

T.R. Carter

CTY: Norfolk TWP: Charlotteville BLK: TRAC: 6 LOT: 4 CON: VII

WELL NAME: Metalore 75 Charlotteville 6-4-VII PERMIT: 7050 INIT CLASS: DEV

OPERATOR: Metalore Resources Ltd TARGET: CLI CUR STATUS: GP

DRILLING DATA				DATES		COORDINATES			SAMPLES	
CONTRACTOR	Elgin Mitchell			PERMIT	1986-09-29	NORTH	478.0	m	TOP	61.0
RIG TYPE	Cable	DEPTHS		SPUD	1986-10-01	SOUTH		m	BOT	405.1
CABLE TOP	1.0	KB ELEV	228.8	COMPTD	1987-01-16	EAST	108.1	m	TRAY	6738
BOT	408.7	LOGGER		OFFCNF	1987-02-15	WEST		m		
ROTARY TOP		DRILLER	408.7	WRKOVR		LAT	42 45 16			
BOT		DEEP END		ABNDND		LONG	80 27 29			
DRLG FLD		PLUG BK	376.0							

INITIAL GAS RECORD

INTERVAL	FLOW	SIP
371.6 – 372.2		
372.2 – 373.1		
373.1 – 373.7		
373.7 – 374.6		
374.6 – 375.2		
375.2 – 376.1		

CASING AND TUBING RECORD

DIAM	WEIGHT	SET AT	HOW SET	RECOV
219	35.7	67.1	CEM	0
139.7	20.8	372.2	CEM	0

COMPLETION DATA

GAS 0.79 10³m³/d

OIL m³/d

SIP 3448 kPa

FORM

INTRVL 372.2-376.1 m

m

m

INITIAL OIL RECORD

INTERVAL	FLOW	DENSITY
–		
–		
–		
–		
–		
–		

LOGGING RECORD

INTERVAL	TYPE	COMPANY
–		
–		
–		
–		
–		
–		
–		

PERF ☐ OPEN HOLE ☐

REMARKS

Critical missing samples

INITIAL WATER RECORD

INTERVAL	STAT LEV	TYPE
9.1 – 39.6		FRE
70.1 –		FRE
97.5 –		FRE
172.2 –		FRE
289.6 –		SUL
–		

CORING RECORD

INTERVAL	LOCATION	NO	mm
–			
–			
–			
–			
–			
–			

GEOLOGICAL CONTACTS		TOP	ELEV	THICK
	KB / LAKE LEVEL	0.0		
	DRIFT /LAKE BOTTOM	1.0		
DEVONIAN	PORT LAMBTON			
DEVONIAN	KETTLE POINT			
DEVONIAN	HAMILTON			
DEVONIAN	MARCELLUS			
DEVONIAN	DUNDEE	61.0		
DEVONIAN	COLUMBUS			
DEVONIAN	LUCAS			
DEVONIAN	AMHERSTBURG	91.4		
DEVONIAN	SYLVANIA			
DEVONIAN	BOIS BLANC	116.0		
DEVONIAN	SPRINGVALE			
DEVONIAN	ORISKANY			
SILURIAN	BASS ISLANDS	153.0		
SILURIAN	G SHALE			
SILURIAN	F SHALE	181.0		
SILURIAN	F SALT			
SILURIAN	E CARBONATE	213.4		
SILURIAN	D SALT/EQUIVALENT			
SILURIAN	C SHALE	242.0		
SILURIAN	B MARKER			
SILURIAN	B EQUIVALENT	254.5		
SILURIAN	B SALT			
SILURIAN	B ANHYDRITE			
SILURIAN	A2 CARBONATE	268.0		
SILURIAN	A2 SALT			
SILURIAN	A2 ANHYDRITE			
SILURIAN	A1 CARBONATE	277.4		
SILURIAN	A1 SALT			
SILURIAN	A1 ANHYDRITE			
SILURIAN	GUELPH	283.5		
SILURIAN	ERAMOSA			
SILURIAN	GOAT ISLAND			
SILURIAN	GASPORT/WIARTON			
SILURIAN	DECEW	350.5		
SILURIAN	ROCHESTER			
SILURIAN	IRONDEQUOIT			
SILURIAN	REYNALES/FOSSIL HILL			
SILURIAN	THOROLD	371.0		
SILURIAN	GRIMSBY	375.7		
SILURIAN	CABOT HEAD	383.0		
SILURIAN	MANITOULIN			
SILURIAN	WHIRLPOOL			
ORDOVICIAN	QUEENSTON			
ORDOVICIAN	BLUE MOUNTAIN - GEORG BAY			
ORDOVICIAN	COLLINGWOOD			
ORDOVICIAN	COBOURG			
ORDOVICIAN	VERULAM			
ORDOVICIAN	KIRKFIELD			
ORDOVICIAN	COBOCONK			
ORDOVICIAN	GULL RIVER			
ORDOVICIAN	SHADOW LAKE			
	CAMBRIAN			
	PRECAMBRIAN			

GEOLOGY BY T.R. Carter

CTY: Norfolk TWP: Houghton BLK: TRAC: 4 LOT: 3 CON: ENR

WELL NAME: Hemlock 11 Houghton 4-3-ENR PERMIT: 7122 INIT CLASS: DEV

OPERATOR: Hemlock Explorations Limited TARGET: CLI CUR STATUS: GP

DRILLING DATA				DATES		COORDINATES			SAMPLES	
CONTRACTOR	Murray Rose Drilling Inc.			PERMIT	1987-04-02	NORTH	411.6	m	TOP	92.7
RIG TYPE	Cable	DEPTHS		SPUD	1987-06-15	SOUTH		m	BOT	446.5
CABLE TOP	0.0	KB ELEV	203.9	COMPTD	1987-08-25	EAST		m	TRAY	9792
BOT	446.5	LOGGER		OFFCNF	1987-09-24	WEST	453.8	m		
ROTARY TOP		DRILLER	446.5	WRKOVR		LAT	42 38 02			
BOT		DEEP END		ABNDND		LONG	80 41 46			
DRLG FLD		PLUG BK								

INITIAL GAS RECORD

INTERVAL	FLOW	SIP
433.7 – 435.3	3.54	
438.6 – 439.2	0.425	
–		
–		
–		
–		

CASING AND TUBING RECORD

DIAM	WEIGHT	SET AT	HOW SET	RECOV
273	62.5	93.3	SHO	93.3
219	35.7	106.7	CEM	
114	14.1	431.6	CEM	

COMPLETION DATA

GAS 3.54 10³m³/d

OIL m³/d

SIP 2517 kPa

FORM

INTRVL 433.7-439.2 m

m

m

INITIAL OIL RECORD

INTERVAL	FLOW	DENSITY
–		
–		
–		
–		
–		
–		

LOGGING RECORD

INTERVAL	TYPE	COMPANY
–		
–		
–		
–		
–		
–		
–		

PERF ☐ OPEN HOLE ☒

REMARKS

A-2 Shale at 330.1

INITIAL WATER RECORD

INTERVAL	STAT LEV	TYPE
104.2 –	27.4	SUL
342.3 –	9.8	BLK
–		
–		
–		
–		

CORING RECORD

INTERVAL	LOCATION	NO	mm
–			
–			
–			
–			
–			
–			

GEOLOGICAL CONTACTS		TOP	ELEV	THICK
	KB /LAKE LEVEL	0.0		
	DRIFT /LAKE BOTTOM	0.0		
DEVONIAN	PORT LAMBTON			
DEVONIAN	KETTLE POINT			
DEVONIAN	HAMILTON			
DEVONIAN	MARCELLUS	93.3		
DEVONIAN	DUNDEE	105.0		
DEVONIAN	COLUMBUS			
DEVONIAN	LUCAS			
DEVONIAN	AMHERSTBURG	145.0		
DEVONIAN	SYLVANIA			
DEVONIAN	BOIS BLANC	185.0		
DEVONIAN	SPRINGVALE			
DEVONIAN	ORISKANY			
SILURIAN	BASS ISLANDS	202.4		
SILURIAN	G SHALE	222.5		
SILURIAN	F SHALE	228.9		
SILURIAN	F SALT			
SILURIAN	E CARBONATE	267.5		
SILURIAN	D SALT/EQUIVALENT			
SILURIAN	C SHALE	288.0		
SILURIAN	B MARKER	301.4		
SILURIAN	B EQUIVALENT	306.3		
SILURIAN	B SALT			
SILURIAN	B ANHYDRITE	313.6		
SILURIAN	A2 CARBONATE	316.1		
SILURIAN	A2 SALT			
SILURIAN	A2 ANHYDRITE	330.5		
SILURIAN	A1 CARBONATE	332.0		
SILURIAN	A1 SALT			
SILURIAN	A1 ANHYDRITE			
SILURIAN	GUELPH	336.5		
SILURIAN	ERAMOSA			
SILURIAN	GOAT ISLAND			
SILURIAN	GASPORT/WIARTON			
SILURIAN	DECEW	410.8		
SILURIAN	ROCHESTER	423.8		
SILURIAN	IRONDEQUOIT	429.2		
SILURIAN	REYNALES/FOSSIL HILL	431.6		
SILURIAN	THOROLD	434.0		
SILURIAN	GRIMSBY	438.4		
SILURIAN	CABOT HEAD	444.6		
SILURIAN	MANITOULIN			
SILURIAN	WHIRLPOOL			
ORDOVICIAN	QUEENSTON			
ORDOVICIAN	BLUE MOUNTAIN - GEORG BAY			
ORDOVICIAN	COLLINGWOOD			
ORDOVICIAN	COBOURG			
ORDOVICIAN	VERULAM			
ORDOVICIAN	KIRKFIELD			
ORDOVICIAN	COBOCONK			
ORDOVICIAN	GULL RIVER			
ORDOVICIAN	SHADOW LAKE			
	CAMBRIAN			
	PRECAMBRIAN			

GEOLOGY BY T.R. Carter

CTY Norfolk TWP Lake Erie BLK 47 TRAC E LOT CON
WELL NAME Place Lake Erie 47-E PERMIT 7172 INIT CLASS DEV
OPERATOR Place Resources Corporation TARGET CLI CUR STATUS GP

DRILLING DATA

CONTRACTOR Place Resources Corporation
RIG TYPE Cable DEPTHS
CABLE TOP 0.0 KB ELEV 174.7
BOT 333.1 LOGGER
ROTRY TOP DRILLER 333.1
BOT DEEP END
DRLG FLD PLUG BK

DATES

PERMIT 1987-08-12
SPUD 1987-09-22
COMPTD 1987-10-27
OFFCNF 1987-11-26
WRKOVR
ABNDND

COORDINATES

NORTH m
SOUTH m
EAST m
WEST m
LAT 42 44 10
LONG 80 14 52

SAMPLES

TOP 30.5
BOT 333.1
TRAY 6827

INITIAL GAS RECORD

INTERVAL	FLOW	SIP
316.1 – 316.7	22.507	2427

CASING AND TUBING RECORD

DIAM	WEIGHT	SET AT	HOW SET	RECOV
219	35.7	30.4	SHO	10.7
114	14.1	310.9	PAC	10.7
25		332.2	HAN	

COMPLETION DATA

GAS $10^3m^3/d$
OIL m^3/d
SIP kPa
FORM Grimsby
INTRVL m

INITIAL OIL RECORD

INTERVAL	FLOW	DENSITY

LOGGING RECORD

INTERVAL	TYPE	COMPANY

PERF ☐ OPEN HOLE ☐

REMARKS

Coarse sand in
Bois Blanc 82.9-89.9

INITIAL WATER RECORD

INTERVAL	STAT LEV	TYPE

CORING RECORD

INTERVAL	LOCATION	NO	ANAL

GEOLOGICAL CONTACTS	TOP	ELEV	THICK
KB / ~~LAKE LEVEL~~	0.0		
~~DRIFT~~ / LAKE BOTTOM	10.7		
DEVONIAN: PORT LAMBTON			
KETTLE POINT			
HAMILTON			
MARCELLUS			
DUNDEE	30.4		
COLUMBUS			
LUCAS			
AMHERSTBURG	45.4		
SYLVANIA			
BOIS BLANC	80.5		
SPRINGVALE			
ORISKANY			
SILURIAN: BASS ISLANDS	99.0		
G SHALE	118.0		
F SHALE	125.6		
F SALT			
E CARBONATE	157.5		
D SALT/EQUIVALENT			
C SHALE	181.0		
B MARKER	197.0		
B EQUIVALENT	200.3		
B SALT			
B ANHYDRITE			
A2 CARBONATE	205.7		
A2 SALT			
A2 ANHYDRITE			
A1 CARBONATE	215.5		
A1 SALT			
A1 ANHYDRITE			
GUELPH	225.6		
ERAMOSA			
GOAT ISLAND			
GASPORT/WARTON			
DECEW	287.8		
ROCHESTER	299.0		
IRONDEQUOIT	308.5		
REYNALES/~~FOSSIL HILL~~	310.9		
THOROLD	313.9		
GRIMSBY	316.5		
CABOT HEAD	330.3		
MANITOULIN			
WHIRLPOOL			
ORDOVICIAN: QUEENSTON			
BLUE MOUNTAIN GEORG BAY			
COLLINGWOOD			
COBOURG			
VERULAM			
KIRKFIELD			
COBOCONK			
GULL RIVER			
SHADOW LAKE			
CAMBRIAN			
PRECAMBRIAN			

GEOLOGY BY T.R. Carter

CTY Norfolk TWP Lake Erie BLK 91 TRAC J-3 LOT CON
WELL NAME Teal S. Walsingham Lake Erie 91-J-3 PERMIT 7096 INIT CLASS DEV
OPERATOR Pembina Exploration Co. Ltd. TARGET CLI CUR STATUS LH-ABD

DRILLING DATA

CONTRACTOR Place Resources Corporation
RIG TYPE Cable DEPTHS
CABLE TOP 0.0 KB ELEV 174.6
BOT 131.1 LOGGER
ROTRY TOP DRILLER 131.1
BOT DEEP END
DRLG FLD PLUG BK

DATES

PERMIT 1986-11-30
SPUD 1986-12-06
COMPTD 1987-01-16
OFFCNF
WRKOVR
ABNDND 1987-04-07

COORDINATES

NORTH m
SOUTH m
EAST m
WEST m
LAT 42 33 45
LONG 80 10 15

SAMPLES

TOP
BOT
TRAY
Dry samples

INITIAL GAS RECORD

INTERVAL	FLOW	SIP

CASING AND TUBING RECORD

DIAM	WEIGHT	SET AT	HOW SET	RECOV
273	59.5	108.2	BAR	1.5
219	35.7	125.3	BAR	1.5

COMPLETION DATA

GAS $10^3m^3/d$
OIL m^3/d
SIP kPa
FORM
INTRVL m

INITIAL OIL RECORD

INTERVAL	FLOW	DENSITY

LOGGING RECORD

INTERVAL	TYPE	COMPANY

PERF ☐ OPEN HOLE ☐

REMARKS

INITIAL WATER RECORD

INTERVAL	STAT LEV	TYPE
108.2 –		FRE
125.3 –		SUL

CORING RECORD

INTERVAL	LOCATION	NO	ANAL

GEOLOGICAL CONTACTS	TOP	ELEV	THICK
KB / LAKE LEVEL	0.0		
DRIFT / LAKE BOTTOM			
DEVONIAN: PORT LAMBTON			
KETTLE POINT			
HAMILTON			
MARCELLUS			
DUNDEE	116.4		
COLUMBUS			
LUCAS			
AMHERSTBURG			
SYLVANIA			
BOIS BLANC			
SPRINGVALE			
ORISKANY			
SILURIAN: BASS ISLANDS			
G SHALE			
F SHALE			
F SALT			
E CARBONATE			
D SALT/EQUIVALENT			
C SHALE			
B MARKER			
B EQUIVALENT			
B SALT			
B ANHYDRITE			
A2 CARBONATE			
A2 SALT			
A2 ANHYDRITE			
A1 CARBONATE			
A1 SALT			
A1 ANHYDRITE			
GUELPH			
ERAMOSA			
GOAT ISLAND			
GASPORT/WARTON			
DECEW			
ROCHESTER			
IRONDEQUOIT			
REYNALES/FOSSIL HILL			
THOROLD			
GRIMSBY			
CABOT HEAD			
MANITOULIN			
WHIRLPOOL			
ORDOVICIAN: QUEENSTON			
BLUE MOUNTAIN GEORG BAY			
COLLINGWOOD			
COBOURG			
VERULAM			
KIRKFIELD			
COBOCONK			
GULL RIVER			
SHADOW LAKE			
CAMBRIAN			
PRECAMBRIAN			

GEOLOGY BY T.R. Carter

T.R. Carter

CTY Norfolk TWP Lake Erie BLK 91 TRAC J-3 LOT CON
WELL NAME Teal Lake Erie 91-J-3 PERMIT 7153 INIT CLASS DEV
OPERATOR Place Resources Corporation TARGET CLI CUR STATUS GP

DRILLING DATA
CONTRACTOR Place Resources Corporation
RIG TYPE Cable DEPTHS
CABLE TOP 0.0 KB ELEV 174.7
BOT 428.9 LOGGER 451.7
ROTRY TOP DRILLER 428.9
BOT DEEP END
DRLG FLD PLUG BK

DATES
PERMIT 1987-07-10
SPUD 1987-07-13
COMPTD 1987-10-05
OFFCNF 1987-11-04
YRMOVR
ABNDND

COORDINATES
NORTH m
SOUTH m
EAST m
WEST m
LAT 42 33 45
LONG 80 10 15

SAMPLES
TOP 101.3
BOT 453.2
TRAY 7966

INITIAL GAS RECORD

INTERVAL	FLOW	SIP
417.3 –		
420.3 – 420.9	1.215	
420.9 – 421.8	8.612	
–		
–		
–		

CASING AND TUBING RECORD

DIAM	WEIGHT	SET AT	HOW SET	RECOV
273	59.5	116.4	SHO	
219	35.7	126.5	BAR	
114	14.1	390.8	PAC	

COMPLETION DATA
GAS 10³m³/d
OIL m³/d
SIP kPa
FORM Thorold
INTRVL 420.3-421.8 m
m
m

INITIAL OIL RECORD

INTERVAL	FLOW	DENSITY
–		
–		
–		
–		
–		
–		

LOGGING RECORD

INTERVAL	TYPE	COMPANY
0.0 – 451.7	GRNL	Computalog
388.6 – 451.7	DENL	"
–		
–		
–		
–		

PERF ☐ OPEN HOLE ☒

REMARKS
Re-entry of lost hole drilled under Permit 7096.

INITIAL WATER RECORD

INTERVAL	STAT LEV	TYPE
135.9 –		SUL
321.9 –		SUL
–		
–		
–		
–		

CORING RECORD

INTERVAL	LOCATION	NO	mm
–			
–			
–			
–			
–			

GEOLOGICAL CONTACTS

		TOP	ELEV	THICK
	KB / LAKE LEVEL	0.0		
	DRIFT / LAKE BOTTOM	0.0		
DEVONIAN	PORT LAMBTON			
	KETTLE POINT			
	HAMILTON			
	MARCELLUS			
	DUNDEE	116.4		
	COLUMBUS			
	LUCAS			
	AMHERSTBURG	131.1		
	SYLVANIA			
	BOIS BLANC	145.0		
	SPRINGVALE			
	ORISKANY			
SILURIAN	BASS ISLANDS	166.1		
	G SHALE	189.0		
	F SHALE	195.7		
	F SALT			
	E CARBONATE	231.0		
	D SALT/EQUIVALENT			
	C SHALE	254.2		
	B MARKER	264.0		
	B EQUIVALENT	269.7		
	B SALT			
	B ANHYDRITE	277.4		
	A2 CARBONATE	282.5		
	A2 SALT			
SILURIAN	A2 ANHYDRITE			
	A1 CARBONATE			
	A1 SALT			
	A1 ANHYDRITE			
	GUELPH	295.0		
	ERAMOSA			
	GOAT ISLAND			
	GASPORT/WIARTON			
	DECEW	366.4		
	ROCHESTER	389.5		
	IRONDEQUOIT	401.4		
	REYNALES/FOSSIL HILL	402.9		
	THOROLD	405.4		
	GRIMSBY	411.2		
	CABOT HEAD	427.0		
	MANITOULIN			
	WHIRLPOOL			
ORDOVICIAN	QUEENSTON			
	BLUE MOUNTAIN - GEORG BAY			
	COLLINGWOOD			
	COBOURG			
	VERULAM			
	KIRKFIELD			
	COBOCONK			
	GULL RIVER			
	SHADOW LAKE			
CAMBRIAN				
PRECAMBRIAN				

GEOLOGY BY T.R. Carter

CTY Norfolk TWP Lake Erie BLK 124 TRAC B LOT CON
WELL NAME Consumers 13905 Lake Erie 124-B PERMIT 7126 INIT CLASS DEV
OPERATOR The Consumers' Gas Company Ltd TARGET SAL CUR STATUS GP

DRILLING DATA
CONTRACTOR Underwater Gas Developers Ltd
RIG TYPE Rotary DEPTHS
CABLE TOP KB ELEV 181.1
BOT LOGGER 353.2
ROTRY TOP 25.2 DRILLER 353.0
BOT 353.0 DEEP END
DRLG FLD PLUG BK

DATES
PERMIT 1987-04-10
SPUD 1987-04-30
COMPTD 1987-05-04
OFFCNF 1987-06-03
YRMOVR
ABNDND

COORDINATES
NORTH m
SOUTH m
EAST m
WEST m
LAT 42 29 01
LONG 80 31 45

SAMPLES
TOP 132.0
BOT 353.0
TRAY

INITIAL GAS RECORD

INTERVAL	FLOW	SIP
336.0 – 353.0	18.904	3920
–		
–		
–		
–		
–		

CASING AND TUBING RECORD

DIAM	WEIGHT	SET AT	HOW SET	RECOV
273	75.9	25.2	HAN	25.2
244	53.6	128.0	CEM	0
178	29.8	190.2	CEM	0
114	14.4	336.4	CEM	0
60	7.0	351.0	HAN	0

COMPLETION DATA
GAS 18.904 10³m³/d
OIL m³/d
SIP 3920 kPa
FORM
INTRVL 346.0-352.0 m
m
m

INITIAL OIL RECORD

INTERVAL	FLOW	DENSITY
–		
–		
–		
–		
–		
–		

LOGGING RECORD

INTERVAL	TYPE	COMPANY
20.0 – 353.0	GRL	SCH
20.0 – 353.0	CNL	"
190.0 – 353.0	LDT	"
–		
–		
–		

PERF ☐ OPEN HOLE ☒

REMARKS
A-2 Shale at 341.6
Samples missing

INITIAL WATER RECORD

INTERVAL	STAT LEV	TYPE
225 –		SUL
–		
–		
–		
–		
–		

CORING RECORD

INTERVAL	LOCATION	NO	mm
338.0 – 352.7	PRL	951	
–			
–			
–			
–			

GEOLOGICAL CONTACTS

		TOP	ELEV	THICK
	KB / LAKE LEVEL	6.4		
	DRIFT / LAKE BOTTOM	25.2		
DEVONIAN	PORT LAMBTON			
	KETTLE POINT			
	HAMILTON			
	MARCELLUS	122.5		
	DUNDEE	131.5		
	COLUMBUS			
	LUCAS			
	AMHERSTBURG	177.0		
	SYLVANIA			
	BOIS BLANC	192.0		
	SPRINGVALE			
	ORISKANY			
SILURIAN	BASS ISLANDS	204.0		
	G SHALE	232.1		
	F SHALE	237.1		
	F SALT			
	E CARBONATE	274.2		
	D SALT/EQUIVALENT			
	C SHALE	296.0		
	B MARKER	315.0		
	B EQUIVALENT	320.4		
	B SALT			
	B ANHYDRITE	327.6		
	A2 CARBONATE	332.5		
	A2 SALT			
SILURIAN	A2 ANHYDRITE	342.4		
	A1 CARBONATE	343.6		
	A1 SALT			
	A1 ANHYDRITE			
	GUELPH	346.7		
	ERAMOSA			
	GOAT ISLAND			
	GASPORT/WIARTON			
	DECEW			
	ROCHESTER			
	IRONDEQUOIT			
	REYNALES/FOSSIL HILL			
	THOROLD			
	GRIMSBY			
	CABOT HEAD			
	MANITOULIN			
	WHIRLPOOL			
ORDOVICIAN	QUEENSTON			
	BLUE MOUNTAIN - GEORG BAY			
	COLLINGWOOD			
	COBOURG			
	VERULAM			
	KIRKFIELD			
	COBOCONK			
	GULL RIVER			
	SHADOW LAKE			
CAMBRIAN				
PRECAMBRIAN				

GEOLOGY BY T.R. Carter

CTY Norfolk TWP Lake Erie BLK 124 TRAC G LOT CON

WELL NAME Consumers 13906 Lake Erie 124-G PERMIT 7127 INIT CLASS DEV

OPERATOR The Consumers Gas Company Ltd TARGET SAL CUR STATUS GS-ABD

DRILLING DATA

CONTRACTOR Underwater Gas Developers Ltd

RIG TYPE Rotary DEPTHS

CABLE TOP KB ELEV 181.0

BOT LOGGER 356.5

ROTARY TOP 23.9 DRILLER 356.5

BOT 356.5 DEEP END

DRLG FLD PLUG BK

DATES

PERMIT 1987-04-10

SPUD 1987-05-06

COMPTD 1987-05-09

OFFCNF 1987-06-08

WWKOVR

ABNDND 1987-05-09

COORDINATES

NORTH m

SOUTH m

EAST m

WEST m

LAT 42 28 00

LONG 80 33 35

SAMPLES

TOP 133.0

BOT 356.5

TRAY 6680

INITIAL GAS RECORD

INTERVAL	FLOW	SIP
349.5 – 356.5	0.320	3874
–		
–		
–		
–		
–		

CASING AND TUBING RECORD

DIAM	WEIGHT	SET AT	HOW SET	RECOV
273	75.9	23.9	HAN	23.9
244	53.6	133.3	CEM	0
178	29.8	252.9	CEM	0

COMPLETION DATA

GAS $10^3m^3/d$

OIL m^3/d

SIP kPa

FORM

INTRVL m

m

m

PERF ☐ OPEN HOLE ☐

REMARKS

A-2 Shale at 339.1

INITIAL OIL RECORD

INTERVAL	FLOW	DENSITY
–		
–		
–		
–		
–		
–		

LOGGING RECORD

INTERVAL	TYPE	COMPANY
20.0 – 356.0	GRL	SCH
20.0 – 356.0	CNL	"
252.0 – 356.0	LDT	"
–		
–		
–		
–		

INITIAL WATER RECORD

INTERVAL	STAT LEV	TYPE
–		
–		
–		
–		
–		
–		

CORING RECORD

INTERVAL	LOCATION	NO	mm
–			
–			
–			
–			
–			

GEOLOGICAL CONTACTS

		TOP	ELEV	THICK
	KB / LAKE LEVEL	6.3		
	DRIFT / LAKE BOTTOM	23.9		
DEVONIAN	PORT LAMBTON			
	KETTLE POINT			
	HAMILTON			
	MARCELLUS	127.4		
	DUNDEE	141.0		
	COLUMBUS			
	LUCAS			
	AMHERSTBURG	178.0		
	SYLVANIA			
	BOIS BLANC	198.0		
	SPRINGVALE			
	ORISKANY			
SILURIAN	BASS ISLANDS	214.0		
	G SHALE	243.2		
	F SHALE	249.2		
	F SALT			
	E CARBONATE	287.0		
	D SALT/EQUIVALENT			
	C SHALE	308.3		
	B MARKER	321.4		
	B EQUIVALENT	326.9		
	B SALT			
	B ANHYDRITE	334.3		
	A2 CARBONATE	339.1		
	A2 SALT			
	A2 ANHYDRITE			
	A1 CARBONATE	349.0		
	A1 SALT			
	A1 ANHYDRITE			
	GUELPH	353.5		
	ERAMOSA			
	GOAT ISLAND			
	GASPORT/WARTON			
	DECEW			
	ROCHESTER			
	IRONDEQUOIT			
	REYNALES/FOSSIL HILL			
	THOROLD			
	GRIMSBY			
	CABOT HEAD			
	MANITOULIN			
	WHIRLPOOL			
ORDOVICIAN	QUEENSTON			
	BLUE MOUNTAIN - GEORG BAY			
	COLLINGWOOD			
	COBOURG			
	VERULAM			
	KIRKFIELD			
	COBOCONK			
	GULL RIVER			
	SHADOW LAKE			
CAMBRIAN				
PRECAMBRIAN				

GEOLOGY BY T.R. Carter

CTY Norfolk TWP North Walsingham BLK TRAC 8 LOT 13 CON VII

WELL NAME F & M 13 North Walsingham 8-13-VII PERMIT 7137 INIT CLASS NPW

OPERATOR F & M Resources Ltd TARGET CLI CUR STATUS GP

DRILLING DATA

CONTRACTOR Murray Rose

RIG TYPE DEPTHS

CABLE TOP KB ELEV 202.9

BOT LOGGER

ROTARY TOP DRILLER 402.3

BOT DEEP END

DRLG FLD PLUG BK

DATES

PERMIT 1987-04-30

SPUD NA

COMPTD NA

OFFCNF

WWKOVR

ABNDND

COORDINATES

NORTH 112.5 m

SOUTH m

EAST m

WEST 111.6 m

LAT 42 41 10

LONG 80 31 47

SAMPLES

TOP 78.3

BOT 404.8

TRAY 9818

INITIAL GAS RECORD

INTERVAL	FLOW	SIP
390.8 – 392.6	0.54	
395.9 – 396.5	1.10	
398.1 – 399.3	1.56	
–		
–		
–		

CASING AND TUBING RECORD

DIAM	WEIGHT	SET AT	HOW SET	RECOV
254		75.3	SHO	75.3
203		83.2	SHO	
102		399.3	CEM	

COMPLETION DATA

GAS $10^3m^3/d$

OIL m^3/d

SIP kPa

FORM Grimsby

INTRVL 390.8-399.3 m

m

m

PERF ☒ OPEN HOLE ☐

REMARKS

A-2 Shale at 291.0

Unable to pick Thorold in samples

INITIAL OIL RECORD

INTERVAL	FLOW	DENSITY
–		
–		
–		
–		
–		
–		

LOGGING RECORD

INTERVAL	TYPE	COMPANY
–		
–		
–		
–		
–		
–		

INITIAL WATER RECORD

INTERVAL	STAT LEV	TYPE
76.5 –	18.9	SUL
149.4 –	12.2	BLK
301.8 –	3.0	SAL
–		
–		
–		

CORING RECORD

INTERVAL	LOCATION	NO	mm
–			
–			
–			
–			
–			

GEOLOGICAL CONTACTS

		TOP	ELEV	THICK
	KB / KINGSCLEAR	0.0		
	DRIFT / KINGSBOTTOM	1.0		
DEVONIAN	PORT LAMBTON			
	KETTLE POINT			
	HAMILTON			
	MARCELLUS			
	DUNDEE	75.3		
	COLUMBUS			
	LUCAS			
	AMHERSTBURG	109.1		
	SYLVANIA			
	BOIS BLANC	153.6		
	SPRINGVALE	167.3		
	ORISKANY			
SILURIAN	BASS ISLANDS	169.5		
	G SHALE	187.5		
	F SHALE	192.9		
	F SALT			
	E CARBONATE	231.0		
	D SALT/EQUIVALENT			
	C SHALE	249.0		
	B MARKER	263.0		
	B EQUIVALENT	267.6		
	B SALT			
	B ANHYDRITE			
	A2 CARBONATE	278.5		
	A2 SALT			
	A2 ANHYDRITE			
	A1 CARBONATE	294.0		
	A1 SALT			
	A1 ANHYDRITE			
	GUELPH	298.5		
	ERAMOSA			
	GOAT ISLAND			
	GASPORT/WARTON			
	DECEW			
	ROCHESTER	369.0		
	IRONDEQUOIT	384.7		
	REYNALES/FOSSIL HILL	386.0		
	THOROLD			
	GRIMSBY	389.5		
	CABOT HEAD	401.5		
	MANITOULIN			
	WHIRLPOOL			
ORDOVICIAN	QUEENSTON			
	BLUE MOUNTAIN - GEORG BAY			
	COLLINGWOOD			
	COBOURG			
	VERULAM			
	KIRKFIELD			
	COBOCONK			
	GULL RIVER			
	SHADOW LAKE			
CAMBRIAN				
PRECAMBRIAN				

GEOLOGY BY T.R. Carter

T.R. Carter

CTY Norfolk TWP North Walsingham BLK TRAC 8 LOT 18 CON VII

WELL NAME F & M 12 North Walsingham 8-18-VII PERMIT 7107 INIT CLASS DEV

OPERATOR F & M Resources Ltd TARGET CLI CUR STATUS GS -ABD

DRILLING DATA

CONTRACTOR Murray Rose Drilling
RIG TYPE Cable
CABLE TOP 1.0
BOT 427.0
ROTRY TOP
BOT
DRLG FLD

DEPTHS
KB ELEV 215.1
LOGGER
DRILLER 427.0
DEEP END
PLUG BK

DATES

PERMIT 1987-02-02
SPUD 1986-12-10
COMPTD 1987-02-02
OFFCNF
WRKOVR
ABNDND 1988-04-29

COORDINATES

NORTH 109.7 m
SOUTH m
EAST m
WEST 223.9 m
LAT 42 42 10
LONG 80 29 55.5

SAMPLES

TOP 197.5
BOT 427.0
TRAY 9055

INITIAL GAS RECORD

INTERVAL	FLOW	SIP
390.1 - 390.8	0.57	3447
390.8 - 391.1	0.71	

CASING AND TUBING RECORD

DIAM	WEIGHT	SET AT	HOW SET	RECOV
273	62.5	77.4		
219	35.7	83.2		
114	14.1	382.8		

COMPLETION DATA

GAS 10 ^{3}m^3/d
OIL m^3/d
SIP kPa
FORM
INTRVL m

INITIAL OIL RECORD

INTERVAL	FLOW	DENSITY

LOGGING RECORD

INTERVAL	TYPE	COMPANY

PERF ☐ OPEN HOLE ☐

REMARKS

INITIAL WATER RECORD

INTERVAL	STAT LEV	TYPE
78.3 -	21.9	FRE
117.3	18.3	SUL
305.4 -	10.4	SLK

CORING RECORD

INTERVAL	LOCATION	NO	mm

GEOLOGICAL CONTACTS	TOP	ELEV	THICK
KB / LAKE LEVEL	0.0		
DRIFT / LAKE BOTTOM	1.0		
DEVONIAN: PORT LAMBTON			
KETTLE POINT			
HAMILTON			
MARCELLUS			
DUNDEE	77.4		
COLUMBUS			
LUCAS			
AMHERSTBURG	117.5		
SYLVANIA			
BOIS BLANC	140.5		
SPRINGVALE			
ORISKANY			
SILURIAN: BASS ISLANDS	172.2		
G SHALE	190.0		
F SHALE	197.5		
F SALT			
E CARBONATE	235.0		
D SALT/EQUIVALENT			
C SHALE	257.0		
B MARKER	268.0		
B EQUIVALENT	278.0		
B SALT			
B ANHYDRITE			
A2 CARBONATE	283.0		
A2 SALT			
A2 ANHYDRITE			
A1 CARBONATE			
A1 SALT			
A1 ANHYDRITE			
SILURIAN: GUELPH	299.0		
ERAMOSA			
GOAT ISLAND			
GASPORT/WIARTON			
DECEW	365.8		
ROCHESTER	372.0		
IRONDEQUOIT	386.5		
REYNALES/FOSSIL HILL	388.0		
THOROLD	389.6		
GRIMSBY	392.0		
CABOT HEAD	400.5		
MANITOULIN	420.9		
WHIRLPOOL			
ORDOVICIAN: QUEENSTON	425.2		
BLUE MOUNTAIN GEORG BAY			
COLLINGWOOD			
COBOURG			
VERULAM			
KIRKFIELD			
COBOCONK			
GULL RIVER			
SHADOW LAKE			
CAMBRIAN			
PRECAMBRIAN			

GEOLOGY BY T. R. Carter

CTY Oxford TWP Blandford BLK TRAC 5 LOT 7 CON VIII

WELL NAME Riley/Northquest, Blandford 5-7-VIII PERMIT 7095 INIT CLASS NPW

OPERATOR Northquest Ventures Inc. TARGET CAM CUR STATUS GP

DRILLING DATA

CONTRACTOR Elgin Mitchell
RIG TYPE
CABLE TOP
BOT
ROTRY TOP
BOT
DRLG FLD

DEPTHS
KB ELEV 306.7
LOGGER
DRILLER 882.4
DEEP END
PLUG BK

DATES

PERMIT 1986.12.22
SPUD
COMPTD 1987.08.21
OFFCNF
WRKOVR
ABNDND

COORDINATES

NORTH 456.1 m
SOUTH m
EAST m
WEST 139.0 m
LAT 43°13'58.5"
LONG 80°41'30"

SAMPLES

TOP 7.9
BOT 882.4
TRAY
9196-97

INITIAL GAS RECORD

INTERVAL	FLOW	SIP
–		
–		
–		
–		
–		

CASING AND TUBING RECORD

DIAM	WEIGHT	SET AT	HOW SET	RECOV

COMPLETION DATA

GAS 10 ^{3}m^3/d
OIL m^3/d
SIP kPa
FORM
INTRVL m

INITIAL OIL RECORD

INTERVAL	FLOW	DENSITY
–		
–		
–		
–		
–		

LOGGING RECORD

INTERVAL	TYPE	COMPANY
–		

PERF ☐ OPEN HOLE ☐

REMARKS

Form 107 - Drilling and Completion Record not submitted by operator.

INITIAL WATER RECORD

INTERVAL	STAT LEV	TYPE
–		
–		
–		
–		
–		

CORING RECORD

INTERVAL	LOCATION	NO	mm
–			
–			
–			
–			
–			

GEOLOGICAL CONTACTS	TOP	ELEV	THICK
KB / LAKE LEVEL			
DRIFT / LAKE BOTTOM			
DEVONIAN: PORT LAMBTON			
KETTLE POINT			
HAMILTON			
MARCELLUS			
DUNDEE			
COLUMBUS			
LUCAS			
AMHERSTBURG			
SYLVANIA			
BOIS BLANC			
SPRINGVALE			
ORISKANY			
SILURIAN: BASS ISLANDS			
G SHALE			
F SHALE			
F SALT			
E CARBONATE			
D SALT/EQUIVALENT			
C SHALE			
B MARKER			
B EQUIVALENT			
B SALT			
B ANHYDRITE			
A2 CARBONATE			
A2 SALT			
A2 ANHYDRITE			
A1 CARBONATE			
A1 SALT			
A1 ANHYDRITE			
SILURIAN: GUELPH			
ERAMOSA			
GOAT ISLAND			
GASPORT/WIARTON			
DECEW			
ROCHESTER			
IRONDEQUOIT			
REYNALES/FOSSIL HILL			
THOROLD			
GRIMSBY			
CABOT HEAD			
MANITOULIN			
WHIRLPOOL			
ORDOVICIAN: QUEENSTON			
BLUE MOUNTAIN GEORG BAY			
COLLINGWOOD			
COBOURG			
VERULAM			
KIRKFIELD			
COBOCONK			
GULL RIVER			
SHADOW LAKE			
CAMBRIAN			
PRECAMBRIAN			

GEOLOGY BY

CTY Oxford TWP Blenheim BLK TRAC 6 LOT 20 CON I

WELL NAME Brett Gobles #58, Blenheim 6-20-I PERMIT 7163 INIT CLASS DEV

OPERATOR H. Brett & Associates Ltd TARGET CAM CUR STATUS DH-ABD

DRILLING DATA

CONTRACTOR Bothwell Drilling & Servicing Ltd
RIG TYPE Rotary
CABLE TOP DEPTHS
BOT KB ELEV 288.0
ROTRY TOP 2.0 LOGGER 887.6
BOT 894.6 DRILLER 894.6
DRLG FLD DEEP END
PLUG BK

DATES

PERMIT 1987-07-23
SPUD 1987-08-04
COMPTD 1987-09-17
OFFCNF 1987-10-17
WRKOVR
ABNDND 1987-11-10

COORDINATES

NORTH 605.6 m
SOUTH m
EAST 75.3 m
WEST m
LAT 43 09 41
LONG 80 35 04

SAMPLES

TOP 54.9
BOT 879.3
TRAY 9192-9193

INITIAL GAS RECORD

INTERVAL		FLOW	SIP
	–		
	–		
	–		
	–		
	–		
	–		

CASING AND TUBING RECORD

DIAM	WEIGHT	SET AT	HOW SET	RECOV
416		3.4	CEM	0
328		40.5	CEM	0
213		254.5	CEM	0

COMPLETION DATA

GAS 10³m³/d
OIL m³/d
SIP kPa
FORM
INTRVL m
m
m
PERF ☐ OPEN HOLE ☐

INITIAL OIL RECORD

INTERVAL		FLOW	DENSITY
	–		
	–		
	–		
	–		
	–		
	–		

LOGGING RECORD

INTERVAL		TYPE	COMPANY
640.0	– 887.5	GRNL	Computalog
819.0	– 887.5	DENL	"
	–		
	–		
	–		
	–		
	–		

REMARKS

INITIAL WATER RECORD

INTERVAL		STAT LEV	TYPE
882.4	–	102.1	SAL
	–		
	–		
	–		
	–		
	–		

CORING RECORD

INTERVAL		LOCATION	NO	###
	–			
	–			
	–			
	–			
	–			

GEOLOGICAL CONTACTS		TOP	ELEV	THICK
	KB ~~/LAKE LEVEL~~	0.0		
	DRIFT ~~/LAKE BOTTOM~~	2.0		
DEVONIAN	PORT LAMBTON			
	KETTLE POINT			
	HAMILTON			
	MARCELLUS			
	DUNDEE			
	COLUMBUS			
	LUCAS			
	AMHERSTBURG			
	SYLVANIA			
	BOIS BLANC			
	SPRINGVALE			
	ORISKANY			
SILURIAN	BASS ISLANDS			
	G SHALE			
	F SHALE	55.7		
	F SALT			
	E CARBONATE	79.3		
	D SALT/EQUIVALENT			
	C SHALE	92.0		
	B MARKER	106.7		
	B EQUIVALENT	109.7		
	B SALT			
	B ANHYDRITE			
	A2 CARBONATE	121.9		
	A2 SALT			
SILURIAN	A2 ANHYDRITE			
	A1 CARBONATE			
	A1 SALT			
	A1 ANHYDRITE			
	GUELPH	136.5		
	ERAMOSA			
	GOAT ISLAND			
	GASPORT/WIARTON			
	DECEW			
	ROCHESTER	242.5		
	IRONDEQUOIT			
	REYNALES/FOSSIL HILL	254.5		
	THOROLD			
	GRIMSBY			
	CABOT HEAD	256.0		
	MANITOULIN	277.0		
	WHIRLPOOL			
ORDOVICIAN	QUEENSTON	280.4		
	BLUE MOUNTAIN GEORG BAY	469.4		
	COLLINGWOOD	624.9		
	COBOURG	660.5		
	VERULAM	671.2		
	KIRKFIELD	769.9		
	COBOCONK	812.0		
	GULL RIVER			
	SHADOW LAKE	881.8		
CAMBRIAN		883.0		
PRECAMBRIAN				

GEOLOGY BY T.R. Carter

CTY Wentworth TWP Binbrook BLK TRAC 3 LOT 25 CON VII

WELL NAME Donald No. 1 Binbrook 3-25-VII PERMIT 7180 INIT CLASS NEW

OPERATOR R. Donald TARGET CLI CUR STATUS GP

DRILLING DATA

CONTRACTOR Blake Montgomery
RIG TYPE Cable
CABLE TOP 0.0
BOT 146.6
ROTRY TOP
BOT
DRLG FLD

DEPTHS
KB ELEV 197.2
LOGGER
DRILLER 146.6
DEEP END
PLUG BK

DATES

PERMIT 1987-08-26
SPUD 1987-09-09
COMPTD 1987-11-19
OFFCNF 1988-11-19
WRKOVR
ABNDND

COORDINATES

NORTH 499.9 m
SOUTH m
EAST m
WEST 187.8 m
LAT 43 05 39
LONG 79 47 37

SAMPLES

TOP 13.7
BOT 146.6
TRAY 7931

INITIAL GAS RECORD

INTERVAL		FLOW	SIP
93.6	–		
98.8	–		
109.4	–		
129.2	– 130.1	0.096	414
	–		
	–		

CASING AND TUBING RECORD

DIAM	WEIGHT	SET AT	HOW SET	RECOV
203	35.7	15.2		0
127	22.3	87.5	PAC	0

COMPLETION DATA

GAS 0.074 10³m³/d
OIL m³/d
SIP 414 kPa
FORM Whirlpool
INTRVL 129.2-130.1 m
m
m
PERF ☐ OPEN HOLE ☒

INITIAL OIL RECORD

INTERVAL		FLOW	DENSITY
	–		
	–		
	–		
	–		
	–		
	–		

LOGGING RECORD

INTERVAL		TYPE	COMPANY
	–		
	–		
	–		
	–		
	–		
	–		

REMARKS

INITIAL WATER RECORD

INTERVAL		STAT LEV	TYPE
19.8	–	9.1	FRE
37.8	–	9.1	SUL
59.4	–	9.1	BLK
	–		
	–		
	–		

CORING RECORD

INTERVAL		LOCATION	NO	###
	–			
	–			
	–			
	–			
	–			
	–			

GEOLOGICAL CONTACTS		TOP	ELEV	THICK
	KB ~~/LAKE LEVEL~~	0.0		
	DRIFT / ~~LAKE BOTTOM~~	0.0		
DEVONIAN	PORT LAMBTON			
	KETTLE POINT			
	HAMILTON			
	MARCELLUS			
	DUNDEE			
	COLUMBUS			
	LUCAS			
	AMHERSTBURG			
	SYLVANIA			
	BOIS BLANC			
	SPRINGVALE			
	ORISKANY			
SILURIAN	BASS ISLANDS			
	G SHALE			
	F SHALE			
	F SALT			
	E CARBONATE			
	D SALT/EQUIVALENT			
	C SHALE			
	B MARKER			
	B EQUIVALENT			
	B SALT			
	B ANHYDRITE			
	A2 CARBONATE			
	A2 SALT			
SILURIAN	A2 ANHYDRITE			
	A1 CARBONATE			
	A1 SALT			
	A1 ANHYDRITE			
	GUELPH	15.2		
	ERAMOSA			
	GOAT ISLAND			
	GASPORT/WIARTON			
	DECEW	59.4		
	ROCHESTER	80.8		
	IRONDEQUOIT			
	REYNALES/~~FOSSIL HILL~~	95.0		
	THOROLD	99.1		
	GRIMSBY	100.0		
	CABOT HEAD	115.0		
	MANITOULIN			
	WHIRLPOOL	129.6		
ORDOVICIAN	QUEENSTON	132.6		
	BLUE MOUNTAIN GEORG BAY			
	COLLINGWOOD			
	COBOURG			
	VERULAM			
	KIRKFIELD			
	COBOCONK			
	GULL RIVER			
	SHADOW LAKE			
CAMBRIAN				
PRECAMBRIAN				

GEOLOGY BY T.R. Carter

T.R. Carter

CTY Wentworth TWP Glanford BLK TRAC 1 LOT 11 CON VII

WELL NAME Maras 1 Glanford 1-11-VII PERMIT 7111 INIT CLASS NPW

OPERATOR Joso Maras TARGET CL1 CUR STATUS GP

DRILLING DATA

CONTRACTOR	Elgin Mitchell		
RIG TYPE	Rotary	DEPTHS	
CABLE TOP		KB ELEV	214.4
BOT		LOGGER	
ROTARY TOP	14.3	DRILLER	153.9
BOT	153.9	DEEP END	
DRLG FLD		PLUG BK	

DATES

PERMIT	1987-03-02
SPUD	1987-03-15
COMPTD	1987-03-25
OFFCNF	
WRKOVR	
ABNDND	

COORDINATES

NORTH		m
SOUTH	111.2	m
EAST	141.2	m
WEST		m
LAT	43 07 25	
LONG	79 53 23	

SAMPLES

TOP	23.5
BOT	152.4
TRAY	4632

INITIAL GAS RECORD

INTERVAL	FLOW	SIP
102.1 –		
132.0 –	0.141	517

CASING AND TUBING RECORD

DIAM	WEIGHT	SET AT	HOW SET	RECOV
178	25.3	16.5	CEM	
114	14.1	91.4	PAC	

COMPLETION DATA

GAS	0.156	$10^3 m^3/d$
OIL		m^3/d
SIP	517	kPa
FORM	Grimsby, Whirlpool	
INTVL	102.1-132.0	m
		m
		m

PERF ☐ OPEN HOLE ☑

INITIAL OIL RECORD

INTERVAL	FLOW	DENSITY

LOGGING RECORD

INTERVAL	TYPE	COMPANY

REMARKS

Disagreement between operator picks and sample depths

INITIAL WATER RECORD

INTERVAL	STAT LEV	TYPE
15.5		SUL
51.8		SUL

CORING RECORD

INTERVAL	LOCATION	NO	mm

GEOLOGICAL CONTACTS

		TOP	ELEV	THICK
	KB / ~~LAND SURF~~	0.0		
	DRIFT / ~~LAKE BOTTOM~~	0.3		
DEVONIAN	PORT LAMBTON			
	KETTLE POINT			
	HAMILTON			
	MARCELLUS			
	DUNDEE			
	COLUMBUS			
	LUCAS			
	AMHERSTBURG			
	SYLVANIA			
	BOIS BLANC			
	SPRINGVALE			
	ORISKANY			
SILURIAN	BASS ISLANDS			
	G SHALE			
	F SHALE			
	F SALT			
	E CARBONATE			
	D SALT/EQUIVALENT			
	C SHALE			
	B MARKER			
	B EQUIVALENT			
	B SALT			
	B ANHYDRITE			
	A2 CARBONATE			
	A2 SALT			
SILURIAN	A2 ANHYDRITE			
	A1 CARBONATE			
	A1 SALT			
	A1 ANHYDRITE			
	GUELPH	14.3		
	ERAMOSA			
	GOAT ISLAND	61.0		
	GASPORT/WIARTON	79.2		
	DECEW			
	ROCHESTER	94.5		
	IRONDEQUOIT			
	REYNALES/FOSSIL HILL	103.6		
	THOROLD	107.8		
	GRIMSBY	109.7		
	CABOT HEAD	119.3		
	MANITOULIN			
	WHIRLPOOL	138.5		
ORDOVICIAN	QUEENSTON	140.2		
	BLUE MOUNTAIN GEORG BAY			
	COLLINGWOOD			
	COBOURG			
	VERULAM			
	KIRKFIELD			
	COBOCONK			
	GULL RIVER			
	SHADOW LAKE			
	CAMBRIAN			
	PRECAMBRIAN			

GEOLOGY BY T.R. Carter